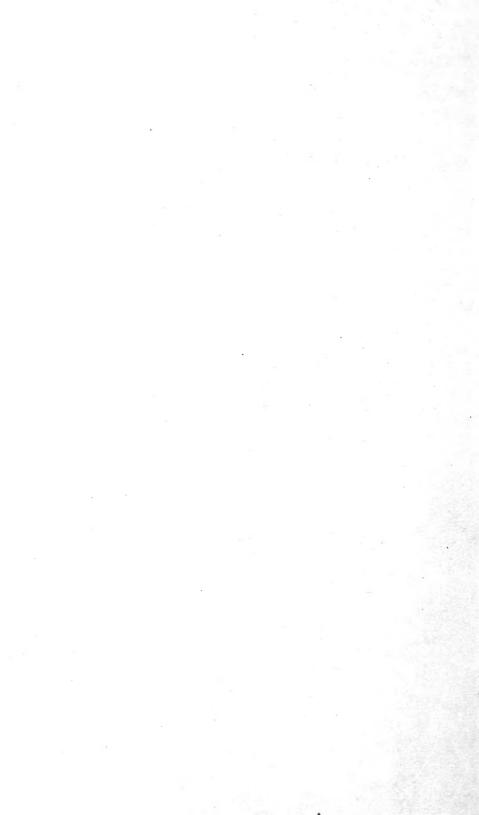
Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.



UNITED STATES DEPARTMENT OF AGRICULTURE



DEPARTMENT BULLETIN No. 1366



Washington, D. C.

W

April, 1926

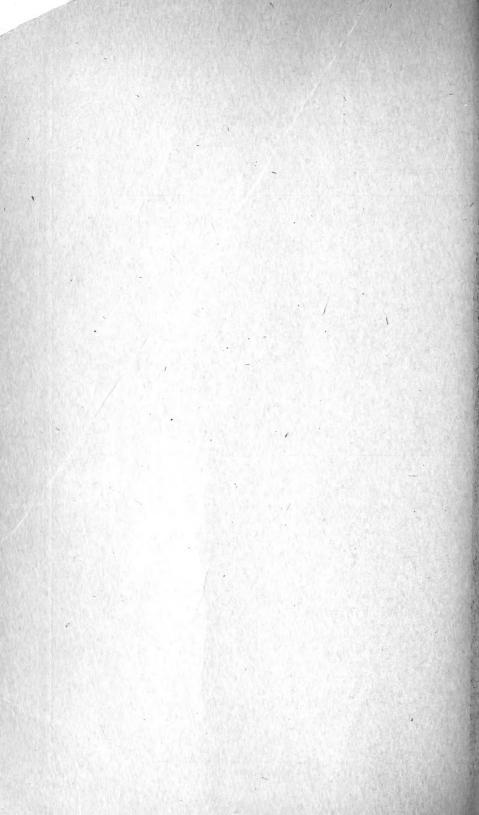
CHECK LIST OF DISEASES OF ECONOMIC PLANTS IN THE UNITED STATES

B

PAUL J. ANDERSON, Pathologist in Charge, Connecticut Tobacco Experiment Station, and temporarily
Associate Pathologist, Plant-Disease Survey; ROYAL J. HASKELL, Associate Pathologist in Charge
of Plant-Disease Survey; WALTER C. MUENSCHER, Assistant Professor of Economic Botany,
New York State College of Agriculture, and temporarily Associate Botanist, PlantDisease Survey, and CLARA J. WELD, Assistant Pathologist, JESSIE I. WOOD,
Junior Pathologist, and G. HAMILTON MARTIN, Assistant Pathologist,
Office of Plant-Disease Survey and Pathological Collections
Bureau of Plant Industry

	-					u	·U	N.	11	71	ш	2													
							-																	P	age
Basis and Scope of th	e List																								2
Host Names										٠						۰									2
Names of Pathogens																									3
Common Names of D																									
Distribution											·				۰		٠								5
Geographic Areas Sp	ecified	in	TH	is	Li	st.	W	itl	1 A	16	br	evi	at	ior	18						•				6
List of Authorities .																									
List of Diseases																								۰	11
Index to Common Na	meso	FF	las	ł e		-						_			_	_	_			_	_	_	_		109

WASHINGTON
GOVERNMENT PRINTING OFFICE



UNITED STATES DEPARTMENT OF AGRICULTURE



DEPARTMENT BULLETIN No. 1366



Washington, D. C.

W

April, 1926

CHECK LIST OF DISEASES OF ECONOMIC PLANTS IN THE UNITED STATES

By Paul J. Anderson, Pathologist in Charge, Connecticut Tobacco Experiment Station, and temporarily Associate Pathologist, Plant-Disease Survey; Royal J. Haskell, Associate Pathologist in Charge of Plant-Disease Survey; Walter C. Muenscher, Assistant Professor of Economic Botany, New York State College of Agriculture, and temporarily Associate Botanist, Plant-Disease Survey; and Clara J. Weld, Assistant Pathologist, Jessie I. Wood, Junior Pathologist, and G. Hamilton Martin, Assistant Pathologist, Office of Plant-Disease Survey and Pathological Collections, Bureau of Plant Industry

For a List pub. in 1950, see 1.965 no.1

Pa	age	Pa	age
Basis and scope of the list Host names. Names of pathogens Common names of diseases Distribution.	2 3 5	Geographic areas specified in this list, with abbreviations	7 11

The Office of Plant-Disease Survey and Pathological Collections has been collecting specimens and data regarding the occurrence and distribution of plant diseases in the United States for a number of years, but no attempt has heretofore been made to prepare a list of all the known diseases of economic importance in this country with their distribution. It is believed that such a list will be of great value to pathologists and others interested in plant diseases and their control, as it will provide a means of determining quickly and easily what diseases have been reported on our important economic plants and their present known distribution, with the name of the causal organism in the case of parasitic diseases and the common name of the disease. It is hoped also that the list will be helpful in bringing about greater uniformity and certainty in the use of both common and scientific names.

The list has been compiled from the office records, and much information and assistance have been given by members of the various pathological offices of the Bureau of Plant Industry and by some of the Plant-Disease Survey collaborators, to all of whom thanks are

tendered.

BASIS AND SCOPE OF THE LIST

The data on which this list is based have come chiefly from four sources: (1) Reports of the Plant-Disease Survey collaborators in the different States, (2) specimens preserved in the Pathological Collections of the Bureau of Plant Industry, (3) the literature on plant pathology and mycology, and (4) the investigations of many specialists who have supplied information. The reports of collaborators have been used principally in the work on the geographic range of the various diseases. It will be seen at a glance that much more information is needed on this subject, and it is hoped that all who are in a position to add to our records will send reports with specimens. The records on specimens in the Pathological Collections have been used to obtain data regarding distribution. It has not been possible to verify the determinations of the fungi found in the herbarium, but all concerning which there was obvious doubt have been omitted. The material, however, is available for examination at any time in case question should arise regarding it. Records from the literature on the subject chiefly relate to additional information regarding the occurrence and geographic range of diseases.

The list is confined to the diseases of the principal economic plants of the United States, including most timber trees and many of the ornamentals. It has been the intention to include all economically important parasitic and nonparasitic diseases known to occur within the continental United States. The parasitic diseases are listed under each host alphabetically by causal organism. These are followed by the nonparasitic diseases and those for which no pathogen is known. These are indicated respectively by "nonpar." and "undet." Such troubles as winter injury, frost injury, and sun scald, which are liable to occur on any plant, have been omitted. There are no doubt other diseases in the literature which have been overlooked, and it is hoped that when such are observed they will be

promptly reported.

It will be noted that the information concerning the geographic distribution of many diseases is obviously incomplete. It is hoped, however, that this preliminary list may stimulate more interest in the subject and lead all who have an opportunity to add to our information to do so. It is particularly important to have plant-disease material and specimens to verify the occurrence of new and

little-known diseases from different localities.

HOST NAMES

The scientific and common names of the hosts included in this list are those used in Standardized Plant Names, and no authority is cited in connection with these names. Occasionally, necessary exceptions which occur in the list are shown by the use of an asterisk.

The diseases of each host are listed separately whenever practicable, but no attempt has been made to separate the diseases of the varieties of the host species, except in a few cases where such varieties include rather distinct crop plants; for example, cabbage, cauliflower, kale, kohlrabi, etc., under Brassica oleracea.

¹ American Joint Committee on Horticultural Nomenclature. Standardized Plant Names. 546 pp Salem, Mass. 1923.

In some of the host genera, as, for example, Quercus, it has been impracticable to list the diseases for each species separately. many genera, such as Prunus and Rubus, in which many of the records of our collaborators simply report a disease as occurring "on Prunus" or "on raspberry," it is not possible to give the particular species of the host; and in some genera the nomenclature of the species is so confused that it is almost impossible to determine what host the collaborator had in mind unless the authority for the species is given or a specimen supplied. For example, the name Populus balsamifera is sometimes applied to any one of a number of species of Populus. In some of the records the generic name of the host species only is given. In this connection it is desirable to urge upon collaborators the great importance of giving specific names of the host plants when sending reports and specimens, or accompanying the reports by specimens of the host as well as the fungus. This is essential in order that our records may be as complete and accurate as possible. The abbreviation "spp." after the generic name of a host means that all diseases reported on any species of the genus are listed and considered in recording the distribution of the diseases—for example, "Sp." after the generic name indicates that the diseases listed were reported largely on an undetermined or doubtfully determined species of the genus—for example, Begonia sp.

In certain host genera the diseases are listed separately for one or more of the common or important species, following which the diseases of all other species of the genus are grouped under "sp." or "spp." In such cases the diseases and their distribution do not necessarily include the diseases or distribution as listed under specific host species—for example, Juniperus virginiana and Juniperus spp.

NAMES OF PATHOGENS

As there is no general agreement at present among the mycologists and phytopathologists of the world in regard to the names of fungous parasites, it has been found necessary to adopt for the purposes of this list, as a rule, the names which are at present in most general use. For some large groups of parasitic fungi, of which more or less recent monographs are available and are largely used for reference by pathologists, it has seemed best to follow rather closely the nomenclature of such works.

Rusts.—The specific names of the rusts which appear in Volume VII of North American Flora have been adopted, except in a few cases where long usage has established a name so firmly that there seems to be no good reason for attempting to supplant it by another; for example, Puccinia graminis is used instead of P. poculiformis for the stem-rust of wheat and P. coronata instead of P. rhamni for the crown-rust of oats. Generic names of long standing and in general use, such as Puccinia and Uromyces, are also retained.

general use, such as Puccinia and Uromyces, are also retained.

Smuts.—The names in this group are those of Clinton's monograph on the Ustilaginales in Volume VII of North American Flora.

Powdery mildews.—Salmon's monograph on the Erysiphaceæ in Volume 9 of the Memoirs of the Torrey Botanical Club has been followed in this group.

Downy mildews—The papers of G. W. Wilson on the Peronosporales have been followed with the exception of the generic name

Rhysotheca, for which the common and well-established name

Plasmopara is retained.

Polypores.—Of the wood-inhabiting polypores and other Hymenomycetes, only those are included which are known to cause definite diseases or rots of living trees or timber and for which the symptoms have been described in pathological literature. Saprophytic species, or those whose economic importance has not been demonstrated, have been omitted. In the choice of names, the more common usage has been followed.

Bacteria.—The names used for the bacterial pathogens are those in most common use, as the bacteriologists apparently are not yet entirely agreed in regard to some recently proposed changes.

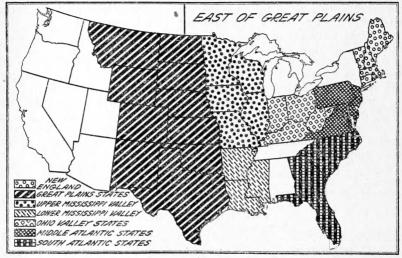


FIG. 1.—Geographic areas used in the list: New England, Great Plains States, upper Mississippi Valley, Ohio Valley States, Middle Atlantic States, and South Atlantic States

Botrytis.—All pathogens of this genus, with a few exceptions, are here listed under the names Botrytis sp. or Botrytis cinerea Auct. It is probable that several distinct species are included under these names, but since there is no satisfactory basis now available for specific distinction, it seems best for present purposes to include all under these names, pending the appearance of a satisfactory revision of the genus.

Synonyms.—Synonyms are given in parentheses in certain pleomorphic species in which the perfect stage is known and in some other cases in which it seems desirable. In general, the name which

has been applied to the perfect stage has been adopted.

COMMON NAMES OF DISEASES

The following principles, some of which have been adopted by the American Phytopathological Society,² have been used in selecting the common names in the present list. Many of these names have already been passed upon and approved by the society.

- (1) First consideration has been given to names already in wide and general use.
- (2) Names descriptive of symptoms have been selected where practicable.
 (3) In general, the various diseases caused by a single organism on different hosts have been given the same common name.

(4) Many diseases which are not sufficiently well known or important to receive a descriptive name have been classed according to their major symptoms;

for example, leaf-blight, root-rot, rust, and wilt.

(5) It is assumed that the generic name of the causal organism may be prefixed to such common names whenever it is deemed desirable. Such generic names have not, however, been repeated in this list.

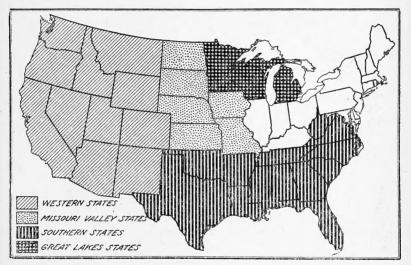


Fig. 2.—Geographic areas used in the list: Western States, Missouri Valley States, Southern States, and Great Lakes States

It is hoped that as many of these common names as prove convenient and satisfactory for practical purposes will be generally adopted, in order that they may become fixed and definite in their application and thus secure uniformity and stability.

DISTRIBUTION

An endeavor has been made to give in a brief form the geographic range of each species as correctly as the available information will permit. Diseases reported from a few or widely scattered States are followed by lists of these States. Diseases which have been reported from a number of States in which the host crop is grown or grows naturally are indicated as "general." Diseases which have been reported from a large number of States and in different parts of the country are indicated as "widespread." If a disease occurs

 $^{^2}$ Shear, C. L. Report of the seventh annual meeting of the American Phytopathological Society. In Phytopathology, vol. 6, pp. 211–212. 1916.

in one or more restricted regions, the range is indicated by listing the The following list gives the States included in each of the regions commonly mentioned. The accompanying maps (figs. 1 to 4) show the outlines of the various regions.

GEOGRAPHIC AREAS SPECIFIED IN THIS LIST, WITH ABBREVIATIONS

New England: Maine (Me.), New Hampshire (N. H.), Vermont (Vt.), Massachusetts (Mass.), Connecticut (Conn.), Rhode Island (R. I.). Middle Atlantic States: New Jersey (N. J.), Pennsylvania (Pa.), Delaware (Del.),

Maryland (Md.), Virginia (Va.).

South Atlantic States: North Carolina (N. C.), South Carolina (S. C.), Georgia

(Ga.), Florida (Fla.).

Southern States: Virginia (Va.), North Carolina (N. C.), South Carolina (S. C.), West Virginia (W. Va.), Tennessee (Tenn.), Georgia (Ga.), Florida (Fla.), Alabama (Ala.), Mississippi (Miss.), Louisiana (La.), Arkansas (Ark.), Oklahoma (Okla.), Texas (Tex.).

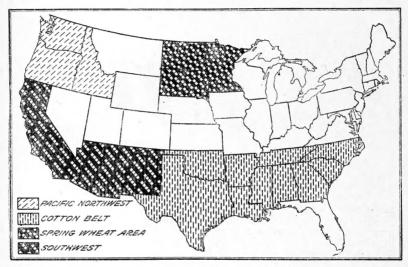


Fig. 3.—Geographic areas used in the list: Pacific Northwest, Cotton Belt, spring-wheat area, and the Southwest

Great Lakes States: Michigan (Mich.), Wisconsin (Wis.), Minnesota (Minn). Upper Mississippi Valley: Wisconsin (Wis.), Illinois (Ill.), Minnesota (Minn.), Iowa (Iowa), Missouri (Mo.).

Lower Mississippi Valley: Arkansas (Ark.), Mississippi (Miss.), Louisiana (La.). Missouri Valley States: North Dakota (N. Dak.), South Dakota (S. Dak.), Nebraska (Nebr.), Iowa, Kansas (Kans.), Missouri (Mo.).

Ohio Valley States: Ohio, Indiana (Ind.), Kentucky (Ky.), West Virginia (W. Va.).

Middle West: Ohio, Indiana (Ind.), Illinois (Ill.), Michigan (Mich.), Wisconsin (Wis.), Minnesota (Minn.), Iowa, Missouri (Mo.), North Dakota (N. Dak.), South Dakota (S. Dak.), Nebraska (Nebr.), Kansas (Kans.).
Gulf States: Florida (Fla.), Alabama (Ala.), Mississippi (Miss.), Louisiana (La.),

Texas (Tex.).

Great Plains States: North Dakota (N. Dak.), South Dakota (S. Dak.), Nebraska Nebr.), Kansas (Kans.), Oklahoma (Okla.), Texas (Tex.), Montana (Mont.), Wyoming (Wyo.), Colorado (Colo.), New Mexico (N. Mex.).

Western States: Montana (Mont.), Wyoming (Wyo.), Colorado (Colo.), New Mexico, (N. Mex.), Idaho, Utah, Nevada (Nev.), Arizona (Ariz.), Washington (Wash.). Oregon (Oreg.), California (Calif.).

Rocky Mountain States:

Northern—Montana (Mont.), Wyoming (Wyo.), Idaho. Southern—Colorado (Colo.), New Mexico (N. Mex.), Utah, Nevada (Nev.), Arizona (Ariz.).

Arizona (Ariz.).

Pacific coast: Washington (Wash.), Oregon (Oreg.), California (Calif.).

Pacific Northwest: Washington (Wash.), Oregon (Oreg.), Idaho.

Southwest: Arizona (Ariz.), New Mexico (N. Mex.), California (Calif.).

Cotton Belt: North Carolina (N. C.), South Carolina (S. C.), Georgia (Ga.),

Alabama (Ala.), Tennessee (Tenn.), Mississippi (Miss.), Louisiana (La.),

Oklahoma (Okla.), Arkansas (Ark.), Texas (Tex.).

Spring-wheat area: North Dakota (N. Dak.), South Dakota (S. Dak.), Minne-

East of Great Plains: All States east of and including the eastern part of North Dakota (N. Dak.), South Dakota (S. Dak.), Kansas (Kans.), Oklahoma (Okla.), Texas (Tex.).

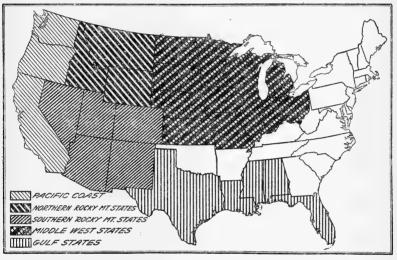


Fig. 4.—Geographic areas used in the list: Pacfic coast, northern Rocky Mountain States, southern Rocky Mountain States, Middle Western States, and Gulf States

It is hoped that all who use this list will report any errors or omissions observed and will send specimens and records of any diseases not reported here or from regions not specified in this list, in order that later editions may be made more complete and accurate than this one.

> C. L. SHEAR, Senior Pathologist in Charge of Plant-Disease Survey and Pathological Collections.

LIST OF AUTHORITIES

The following is a complete list of the authorities used in the index, with the abbreviations of the names occurring most frequently:

Aderh. = R. Aderhold.

Alb. = Johannes Baptiste von Albertini.

Allesch. = Andreas Allescher. Alm. = J. V. d'Almeida.

Am. Auct. = of American authors.

Anderson, H. W.

Anderson, P. J. Appel = O. Appel.

Arcangeli, G. Arn. = G. Arnaud. Arth. = J. C. Arthur.

Arthur, John M. Atk. = George F. Atkinson. Auct. = of authors. Auer. = B. Auerswald. Baeumler, J. A. Bain, S. M. Bak. = A. L. Bakke. Barclay, A.
Barss = H. P. Barss.
Barth. = E. T. Bartholomew.
Bast. = H. C. Bastian. Batsch = August Johann Batsch. Beckm. = Paul Beckmann. Bellynck, A. Berngles, A. de Berenger. Berk. = M. J. Berkeley. Berl. = A. N. Berlese. Bertero, C. G. Berth. = A. Berthold. Bessey, E. A. Bethel = E. G. Bethel. Biv. = A. de Bivona-Bernhardi. Bizz. = G. Bizzozero. Bjerk. = C. Bjerkander. Blox. = A. Bloxam. Bon. = H. F. Bonorden. Bonar, L. Boncquet, P. A. Bosc = Louis A. Guillaime Bosc. Br. = C. E. Broome. Braun = A. Braun. Braun, H. Brenckle = J. F. Brenckle. Bres. = Giacomo Bresadola. Briard, H. Briosi = G. Briosi. Brot. = Felix de Avellar Brotero. Brown, J. G.
Brown, N. = Nellie A. Brown.
Brun. = P. Brunaud. Bryan, M. K. = Mary K. Bryan. Bub. = F. Bubak. Bull. = Pierre Bulliard. Bull. = Pierre Bulliard.
Burk. = W. H. Burkholder.
Burr. = T. J. Burrill.
Butl. = E. J. Butler.
Cam. = M. d'Souza da Camara.
Carpenter, C. W.
Carter, C. N.
Casp. = R. Caspary.
Cast. = L. Castagne.
Catt. = A. Cattaneo.
Cav. = Fridiano Cavara.
Cda. = A. C. J. Corda.
Ces. = Vincenzo Cesati.
Charles, V. K. Charles, V. K. Chester = F. D. Chester. Chev. = F. Chevallier.Childs = Le Roy Childs. Chupp, C. Cke. = M. C. Cooke Clapp, G. L. Clausen, R. E. Claments, F. E.
Clint. = G. P. Clinton.
Cobb = N. A. Cobb.
Coerper = Florence M. Coerper.
Cohn = Ferdinand Julius Cohn.

Colby, A. S. Com. S. A. B. = Committee of the Society of American Bacteriologists. Coons, G. H. Cordley, A. B. Coville = F. V. Coville. Crouan, P. L. Currey, F. Curt. = M. A. Curtis. Dan. = P. A. Dangeard. Dana, B. F.
Davis = J. J. Davis.
D By. = Anton de Bary. DC. = Augustin Pyramus de Candolle. Dearn. = John Dearness. Del. = G. Delacroix. DeLac. = l'Abbé S. de Lacroix. DeNot. = G. de Notaris. DeSevn. = J. de Seynes. Desm. = J. B. H. J. Desmazieres. DeToni = G. B. de Toni. Died. = H. Diedicke. Diet. = P. Dietel. Dodge, B. O. Doidge = E. M. Doidge. Dorsett, P. H. Drechs. = Charles Drechsler.
Duby = J. E. Duby.
Dug. = B. M. Duggar.
Dur. = Durieu de Maisonneuve. Durand, E. J.
Earle = F. S. Earle.
Eddy, E. D.
Edg. = C. W. Edgerton.
Edson, H. A. EFS. = Erwin F. Smith. Ehr. = C. G. Ehrenberg. Eidam = E. Eidam. Ell. = J. B. Ellis.Elliott, Charlotte. Elliott, J. A. Engelm. = George Engelmann. Enlows, = Ella M. A. Eriks. = J. Eriksson. Ev. = B. M. Everhart. Ezekiel, Walter N.
Fairman = C. E. Fairman.
Farl. = W. G. Farlow.
Fautr. = F. Fautrey.
Fawc. = H. S. Fawcett. Fckl. = L. Fuckel. Field, Ethel. Fisch. = A. Fischer von Waldheim. Fischer, Ed. = Eduard Fischer. Fitz. = H. M. Fitzpatrick. Foster, A. C. Fr. = Elias M. Fries. Frank, A. B. Fresen. = George Fresenius. Fromme, F. D. Frost, C. C. Gall. = B. T. Galloway. Gardner, M. W. Garovaglio, Santo. Gerard, W. R. Gidd. = N. J. Giddings. Gies. = Karl Giesenhagen.

Gill. = Claude Casimir Gillet. Gloyer, W. O. Godfrey, G. H. Godkin, James. Goodding, Leslie N. Graves, A. H.
Graves, A. H.
Gray, S. F.
Greef = R. Greef.
Gregory, C. T.
Griff. = David Griffiths.
Griffin, F. L.
Gross. = J. G. Grossenbacher.
Grout, A. J.
Gues = H. T. Guessow Gues. = H. T. Guessow. Hahn, G. Hall, J. G. Hall, van = Constant Johan Jacob van Hals. = Byron D. Halsted. Hanzawa, J. Hara, K. Hark. = H. W. Harkness. Harter = L. L. Harter. Hartig = Robert Hartig. Hartog — Robert Hartog.

Harz, C. O.

Hasse — Clara Hasse.

Heald = F. D. Heald.

Hedge = G. G. Hedgeock. Hedges = Florence Hedges.
Hedw. f. = R. A. Hedwig.
Hemmi, Takewo.
Henn. = Ernst Henning. Henn., P. = Paul Hennings. Hesse = Rudolf Hesse. Hig. = B. B. Higgins. Hoehn. = F. von Hoehnel. Holw = E. W. D. Holway. Hopkins, E. F.
Hudson, William.
Humph. = J. E. Humphrey.
Hunt = N. Rex Hunt. Jaap, Otto.
Jack. = H. S. Jackson.
Jacq. = Nicholas Joseph Jacquin.
Jacz. = Arthur de Jaczewski.
Jagger, I. C.
James, G. F.
Jameson, C. Jamieson, C. Jehle = R. A. Jehle. Jenkins, A. Jens. = J. L. Jensen. Johans. = C. J. Johanson. Johnson, A. G.
Johnson, James.
Johnson, T.
Jones, F. R.
Jones, L. R.
Juel = H. O. Juel.
Kab. = J. E. Kabat.
Karst. = P. A. Karsten.
Kauffman, C. H.
Kell. = W. A. Kellerman.
Kendrick, J. B.
Kern = F. D. Kern.
Khazanoff, A. Johnson, A. G. Khazanoff, A. King = Charlotte King. Kirchner, L. Kleb. = H. Klebahn.

58433-26†---2

Klotzsch, J. F. Koern. = F. Koernicke. Krueger, W. Kuehn = J. Kuehn. Kuenn = J. Kuenn.
Kuntze, O.
Kze. = G. Kunze.
Laf. = H. A. Lafferty.
Lagh. = G. von Lagerheim.
Lambert, C. R.
Langlois, A. B.
Lasch = W. G. Lasch. Leb. = Hermann Lebert. Lee, H. A. Leonian, L. H. Lév. = J. H. Léveillé. Lewis, I. M. Lib. = Marie Anne Libert. Lindau = G. Lindau. Lindr. = J. I. Lindroth. Liro, J. I. Lk. = Heinrich Friedrich Link
Long = W. H. Long.
Ludwig, C. A.
Ludwig, F.
Luedi, R.
Lyon, H. L.
Mackie, W. W.
Magn. = P. Magnus.
Mains, E. B.
Manns, T. F.
Marignoni, G. B.
Mart. = George Martin.
Martius, C. = C. F. P. von Martius
Mass. = George Massee.
Matz, J. Lk. - Heinrich Friedrich Link Matz, J. Maub. = A. Maublanc. McAlp. = D. McAlpine. McC. = Lucia McCulloch. McClain, R. L. Meier, F. Meinecke, E. P. Melhus, I. E. Metcalf, H. A. Miles, L. E. Miyabe = Kingo Miyabe. Miyake = Tehiro Miyake. Molliard, M. Mont.=J. F. C. Montagne. Morgan, Andrew Price. Moug. = Jean Baptiste Mougeot. Muell. = C. Mueller. Munn, M. T. Murr. = W. A. Murrill.
Murray, T. J.
Nees = Christian Gottfried Nees von Esenbeck. Neg. = Friedrich Wilhelm Neger. Niessl = G. von Niessl. Nishida, T. Noack, F Norton, J. B. S.
Nutt. = Thomas Nuttall.
O'Gara, P. J.
Osner, George. Otth = G. H. Otth.Oud. = C. A. J. A. Oudemans. Overh. = L. O. Overholts. Pam. = L. H. Pammel.

10 Pass. = Giovanni Passerini. Pat. = Narcisse Patouillard. Patterson, F. = Flora Wambaugh Patterson. Paxton, G. E. Pegl. = V. Peglion. Penz. = O. Penzig. Perc. = C. Percival. Pers. = Christian Hendrik Persoon. Peterson, A.
Peth. = G. H. Pethybridge.
Petr. = Franz Petrak.

William Phillips Phill. = William Phillips. Pierce, Newton B. Piper = C. V. Piper. Pk. = C. H. Peck. Plow. = C. B. Plowright. Poit. = A. Poiteau. Poll. = Gino Pollacci. Porte, W. S.
Posey = G. B. Posey.
Preuss = C. G. T. Preuss.
Prill. = Ed. Prilleaux. Pritchard, F. J. Quel. = Lucien Quélet. Rabh. = G. L. Rabenhorst. Rabh. = G. L. Rabenhors
Raciborski, M.
Ramsey, G. B.
Rand, F. V.
Rankin, W. H.
Rav. = H. W. Ravenel.
Ravaz = L. Ravaz.
Reade, J. M.
Reb. = J. F. Rebentisch.
Reddick, D.
Reddy, C. S.
Regel, E.
Rehm = H. Rehm. Rehm = H. Rehm. Reinke = Johannes Reinke. Ricker, P. L. Riess, H. Ritzema Bos, J. Rob. = M. Roberge. Roberts, J. W. Rose, D. H. Rosen, H. R. Rosen, H. R.
Rosenbaum, J.
Rosendahl, C. O.
Rostew. = S. I. Rostewzew.
Rostr. = E. Rostrup.
Roum. = C. Roumeguère.
Roze = E. Roze.
Rudolph, A. B.
S. A. B. (Com.) = Committee of
Society of American Bactariologists Society of American Bacteriologists. Sacc. = P. A. Saccardo. Sacc., D. = D. Saccardo. Sackett, W. G. Sadeb. = R. E. B. Sadebeck. Salm. = E. S. Salmon. Scalia, G. Schaeff. = J. C. Schaeffer. Schilb. = K. Schilbersky. Schl. = Diedrich Franz Leonhard von Schlechtendahl.

Schm. = J. K. Schmidt.

Schmidt, A.

Schneider, A.

Schrad. = Heinrich Adolph Schrader. Schrank = E. P. von Schrank. Schrenk = Hermann von Schrenk. Schroet. = J. Schroeter. Schultz, E. S. Schulz. = S. Schulzer von Muggenburg. Schum. = Christian Friedrich Schumacher. macher.
Schw. = Lewis David von Schweinitz.
Scrib. = F. L. Scribner.
Seaver = F. J. Seaver.
Seym. = A. B. Seymour.
Shaw, F. J. F.
Shear = C. L. Shear.
Sheld. = J. L. Sheldon.
Sherb. = C. D. Sherbakoff.
Sideris, C. P.
Sierler, E. A. Siegler, E. A. Slagg, C. M. Smith, C. O. Smith, E. H. Smith, R. E. Smith, W. G. Southworth, E. A. Sow. = J. Sowerby. Sow. = J. Sowerby.

Spauld. = Perley Spaulding.

Speg. = C. Spegazzini.

Stein. = J. G. Steinbuch.

Stevens, F. L.

Stewart, F. C.

Stewart, V. B.

Ston. = Bertha M. Stoneman. Stone, R. E. Sw. = Walter T. Swingle. Syd. = H. and P. Sydow. Tak. = Yoshiro Takahashi. Tassi, F. Taub. = J. J. Taubenhaus. Tehon, L. R. Tharp = B. C. Tharp. Thax. = Roland Thaxter. Thom, Ch. Thomas, F. Thomas, R. C. Thore, Jean. Thuem. = F. von Thuemen. Tiegh. = P. E. L. van Tieghem. Tisdale, W. B. Tode = Heinrich J. Tode. Town. = C. O. Townsend.
Tr. = S. M. Tracy.
Trel. = W. Trelease.
Trev. = V. Trevisan.
Tub. = Karl Freiherr von Tubeuf. Tul. = L. R. Tulasne or C. and L. R. Tulasne. Turconi, M. Underw. = Lucien Marcus Underwood. Ung. = F. Unger.Vahl = Martin Vahl. Van Breda de Haan = J. van Breda de Haan. Van Hall = Constant Johan Jacob van Hall. Vester. = T. Vestergren. Viala = P. Viala.

Vogl. = P. Voglino.

Waite, M. B. Wakker, J. H.

Wallr. - Karl Friedrich Wilhelm Wall-

Weber, G. F.

Weber, C.
Weir, C.
Weir = J. R. Weir.
Welch, D. C.
Went, F. A.
West. = G. D. Westendorp.

Wetts. = Richard von Wettstein. Whet. = H. H. Whetzel.

Wilcox, E. M.

Williamson, M. M.

Wils. = G. W. Wilson.

Wilson, M.

Wingard, S. A. Wint. = G. Winter.

Wolf = F. A. Wolf.
Woll. = H. W. Wollenweber.
Wor. = M. S. Woronin.

Wormald, H.
Wrob. = A. Wroblewski.
Wulf. = Franz Xavier von Wulfen.

Young, E. Young, P. A. Zeller, S. M.

Zinssmeister, C. L. Zopf = Friederich Wilhelm Zopf.

LIST OF DISEASES

[An asterisk (*) shows that the name of the host given differs from that appearing in Standardized Plant Names; nonpar. = nonparasitic; undet. = undetermined.]

ABIES.

A. amabilis, cascade fir.

Caluptospora columnaris (Alb. and Schw.) Kuehn, leaf blister rust. Wash. Wash. Dimerosporium sp., sooty mold.

Echinodontium tinctorium Ell. and Ev., brown stringy rot. Wash., Oreg.

Wash. Fomes annosus Fr., white spongy rot.

F. pinicola Fr., brown crumbly rot. General with host.

Hypoderma robustum Tub., needle cast. Oreg.

Hypodermella abietis-concoloris Dearn., needle cast. Oreg.

Melampsorella elatina (Alb. and Schw.) Arth.

Polyporus schweinitzii Fr., red-brown butt-rot. Oreg.

Pucciniastrum pustulatum (Pers.) Diet., leaf blister rust. Wash.

Razoumofskya douglasii (Engelm.) Piper, mistletoe. Wash.

R. occidentalis abietina (Engelm.) Coville, mistletoe witches'-broom.

Uredinopsis copelandii Syd., leaf blister rust. Wash., Oreg.

U. pteridis Diet. and Holw., rust. Wash.

A. balsamea, balsam fir.

Calyptospora columnaris (Alb. and Schw.) Kuehn, leaf blister rust. Northern States.

Fomes pinicola Fr., brown crumbly rot. N. Y.

F. roseus (Alb. and Schw.) Fr., brown pocket rot. General within range of host.

Adirondack region. Lophodermium nervisequium (DC.) Rehm, needle cast. Melampsora americana Arth., rust. Vt., Mich., Wis.

Melampsorella elatina (Alb. and Schw.) Arth., rust witches'-broom. New England, N. Y., Lake States.

Nectria cucurbitula Fr., bark canker. N. Y., Pa.

Polyporus schweinitzii Fr., red-brown butt-rot. General with host.

Pucciniastrum pustulatum (Pers.) Diet., leaf blister rust. Wis., Mich.

Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot.

Common.

Uredinopsis sp. (Peridermium balsameum Pk.), leaf blister rust. N. H., N. Y., Pa., Wis., Minn., Wash.

A. concolor, white fir.

Calyptospora columnaris (Alb. and Schw.) Kuehn, leaf blister rust. Calif.

Echinodontium tinctorium Ell. and Ev., brown stringy rot. Common in Western States.

Fomes officinalis Fr., reddish brown-rot. Western States.

F. pinicola Fr., brown crumbly rot. General in range of host.

Herpotrichia nigra Hartig, matting. Calif.

Hypodermella abietis-concoloris Dearn., needle cast. Colo., Oreg. Lophodermium nervisequium (DC.) Rehm, needle cast. Oreg., Calif. Melampsora americana Arth., rust. Colo.

Peridermium ornamentale Arth., rust. Oreg., Calif.

ABIES—Continued.

A. concolor, white fir—Continued.

Phacidium infestans Karst., needle blight. Idaho.

Polyporus schweinitzii Fr., red-brown butt-rot. General with host. Pucciniastrum pustulatum (Pers.) Diet., rust. Colo. Razoumofskya douglasii abietina (Engelm.) Piper, mistletoe. Ariz. to Oreg. R. occidentalis abietina (Engelm.) Coville, mistletoe witches'-broom. Utah, Oreg., Calif.

Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot.

Calif.

A. grandis, great silver fir.

Botrytis sp., seedling twig-blight. Idaho.

Calyptospora columnaris (Alb. and Schw.) Kuehn, leaf blister rust. Mont. Dimerosporium sp., sooty mold. Wash.

Echinodontium tinctorium Ell. and Ev., brown stringy rot. Mont., Idaho,

Pacific coast.

Fomes officinalis Fr., reddish brown-rot. Idaho. F. pinicola Fr., brown crumbly rot. Idaho, Wash. Herpotrichia nigra Hartig, matting. Idaho.

Herpotrichia nigra Hartig, matting. Hydnum sp., hollow pocket rot. Idaho, Wash.

Lophodermium abietis Rostr., needle cast. Pacific Northwest. L. nervisequium (DC.) Rehm, needle cast. Idaho.

Melampsora americana Arth., rust. Idaho, Wash., Oreg.
M. arctica Rostr., rust. Idaho, Mont.
Melampsorella elatina (Alb. and Schw.) Arth., rust witches'-broom. Pacific Northwest.

Peridermium rugosum Jack., rust. Wash., Oreg.

Phacidium infestans Karst., needle blight. Idaho. Polyporus dryadeus (Pers.) Fr., heart-rot. Pacific Pacific Northwest. P. schweinitzii Fr., red-brown butt-rot. General with host,

P. sulphureus (Bull.) Fr., brown-checked wood-rot.

Pucciniastrum pustulatum (Pers.) Diet., leaf blister rust. Idaho, Mont., Oreg., Wash.

Razoumofskya douglasii (Engelm.) Piper, mistletoe. Pacific coast, Idaho. R. occidentalis abietina (Engelm.) Coville, mistletoe witches'-broom. Idaho, Oreg., Calif.

Rhizina inflata (Schaeff.) Sacc., seedling blight. Mont. Uredinopsis copelandii Syd., leaf blister rust. Pacific Northwest. U. pteridis Diet. and Holw., rust. Mont., Idaho, Wash., Oreg., Calif.

A. lasiocarpa, alpine fir.

Calyptospora columnaris (Alb. and Schw.) Kuehn, leaf blister rust. Idaho, Mont., Wyo., Colo., Oreg.

Echinodontium tinctorium Ell. and Ev., brown stringy rot. Mont. Fomes pinicola Fr., brown crumbly rot. General within range of host. Herpotrichia nigra Hartig, matting. Colo., Wyo., Idaho.

Melampsora americana Arth., rust.

M. arctica Rostr., rust. Idaho, Mont.
Melampsorella elatina (Alb. and Schw.) Arth., rust witches'-broom. Mont., Wyo., Utah.

Peridermium ornamentale Arth., rust. Oreg.

Idaho. Phacidium infestans Karst., needle blight.

Polyporus schweinitzii Fr., red-brown butt-rot.

Pucciniastrum pustulatum (Pers.) Diet., leaf blister rust. Mont., Oreg., Colo., Idaho, Alaska.

Razoumofskya douglasii (Engelm.) Piper, mistletoe. Colo., Mont.

R. laricis Piper, mistletoe witches'-broom. Mont.

Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot. Common with host.

Uredinopsis copelandii Syd., leaf blister rust. Colo.

A. magnifica, red fir.

Calif., Calyptospora columnaris (Alb. and Schw.) Kuehn, leaf blister rust.

Echinodontium tinctorium Ell. and Ev., brown stringy rot.

Fomes officinalis Fr., reddish brown-rot. Calif.

F. pinicola Fr., brown crumbly rot. General within range of host.

ABIES-Continued.

A. magnifica, red fir-Continued.

Herpotrichia nigra Hartig, matting. Calif. Lophodermium nervisequium (DC.) Rehm, needle cast. Calif. Polyporus schweinitzii Fr., red-brown butt-rot. General with host.

P. sulphureus (Bull.) Fr., brown-checked wood-rot.
Razoumofskya douglasii (Engelm.) Piper, mistletoe. Calif.
R. occidentalis abietina (Engelm.) Coville, mistletoe witches'-broom. Calif.

Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot. Calif.

A. nobilis, noble fir.

Echinodontium tinctorium Ell. and Ev., brown stringy rot. Common in Western States.

Fomes pinicola Fr., brown crumbly rot. Common with host.

Hypoderma robustum Tub., needle cast. Oreg.

Hypodermella abietis-concoloris Dearn., needle cast. Oreg.

Polyporus schweinitzii Fr., red-brown butt-rot. Gen Pucciniastrum pustulatum (Pers.) Diet., rust. Oreg.

Razoumofskya douglasii (Engelm.) Piper, mistletoe. Wash.
R. occidentalis abietina (Engelm.) Coville, mistletoe witches'-broom. Oreg.
Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot.
Common within range of host.

Uredinopsis pteridis Diet. and Holw., rust. Oreg.

A. veitchii, Veitch fir.

Fusicoccum abietinum (Hartig) Prill. and Del. Ohio.

ACACIA.

A. farnesiana, sweet acacia.

Ravenelia australis Diet. and Neg., rust. R. siliquae Long, rust. Tex., N. Mex.

ACER.

A. circinatum, vine maple.

Cytospora chrysosperma (Pers.) Fr., canker. Nectria galligena Bres., European canker. Oreg. Septoria aceris-macrophylli Pk., leaf-spot. Wash Wash. S. circinata Ell. and Ev., leaf-spot. Wash., Oreg.

A. dasycarpum, silver maple.

Fomes fomentarius (L.) Fr., white sapwood rot. F. igniarius (L.) Fr., white heart-rot. Vt., N. Gloeosporium acerinum West., leaf-blight. Kans., Mo. G. apocryptum Ell. and Ev., leaf-blight. N. J. Pholiota adiposa Fr., wood-ret.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Ind. Phyllactinia corylea (Pers.) Karst., powdery mildew. Wis.

Phyllosticta minima (Berk. and Curt.) Ell. and Ev., leaf-spot. General east of Great Plains.

P. minutissima Ell. and Ev., leaf-spot. Wis.

Polyporus delectans Pk. D. C.

Rhytisma acerinum (Pers.) Fr., tar-spot. General east of Great Plains. Septogloeum acerinum (Pass.) Sacc., leaf-spot. Ala. Septoria acerina Pk., leaf-spot. N. Y.

S. saccharina Ell. and Ev., leaf-spot. S. salliae W. R. Gerard, leaf-spot. t. New England, N. Y., Wis. N. Y.

Taphrina sp., leaf blister. Mich.

Uncinula circinata Cke. and Pk., powdery mildew. General east of Great Plains.

Verticillium sp., wilt. Va.

A. glabrum, Rocky Mountain maple.

Cylindrosporium consociatum Dearn., leaf-spot. Pacific Northwest. Cytospora chrysosperma (Pers.) Fr., canker. Mont., Pacific Northwest.

Fomes igniarius (L.) Fr., white heart-rot. Central States.

Phyllosticta minima (Berk. and Curt.) Ell. and Ev., leaf-spot. Rocky Mts. and Pacific Northwest.

ACER-Continued.

A. glabrum, Rocky Mountain maple—Continued.

Septoria acerina Pk., leaf-spot. Oreg. S. circinata Ell. and Ev., leaf-spot. Colo., Calif. S. saccharina Ell. and Ev., leaf-spot. Wash.

A. macrophyllum, Oregon maple.

Cercosporella aceris Dearn. and Barth., leaf-spot. Wash., Oreg. C. albopunctata Ell. and Ev., leaf-spot. Wash.

Western States.

Fomes igniarius (L.) Fr., white heart-rot. Nectria cinnabarina Fr., canker. Wash.

N. galligena Bres., European canker. Oreg.
Rhytisma acerinum (Pers.) Fr., tar-spot. Wash.
R. punctatum (Pers.) Fr., black-specked leaf-spot.
Septoria aceris-macrophylli Pk., leaf-spot. Wash.

Pacific coast.

S. circinata Ell. and Ev., leaf-spot. Wash., Oreg.

A. negundo, boxelder.

Cercospora negundinis Ell. and Ev., leaf-spot. Nebr.

Cylindrosporium negundinis Ell. and Ev., leaf-spot. Nebr., Kans.

Fusarium negundi Sherb., red-stain. General with host.
Gloeosporium apocryptum Ell. and Ev., anthracnose. Wis., Ill., Kans.,

G. negundinis Ell. and Ev., leaf-blight. Del., Tex. Nectria cinnabarina Fr., canker. Ohio, Minn., N. Dak.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-Tex.

Phleospora aceris (Lib.) Sacc., leaf-spot. Calif.
Phyllosticta arida Earle, leaf-spot. Ala.
P. minima (Berk. and Curt.) Ell. and Ev., leaf-spot. Conn.
P. negundinis Sacc. and Speg., leaf-spot. Me., R. I., W. Va., Ala.
Pleurotus ostreatus Jacq., white line rot. N. Dak., S. Dak., Nebr.

P. ulmarius Bull., white sap-rot. Iowa, Kans.
Polyporus squamosus (Huds.) Fr., white strand-rot. Minn.

Rhytisma punctatum (Pers.) Fr., black-specked leaf-spot. N. Y.

Septogloeum acerinum (Pass.) Sacc., leaf-spot. Calif.

Septoria acerella Sacc., leaf-spot. Mo., Mont.

S. marginata Heald and Wolf, leaf-spot. Tex. S. negundinis Ell. and Ev., leaf-spot. Mass., Utah.

S. samarae Pk., leaf-spot. Colo. Sphaeropsis albescens Ell. and Ev., twig-blight. S. Dak., Kans.

Stereum purpureum Pers., silver leaf. S. Dak.

A. negundo californicum, California boxelder.

Phleospora aceris (Lib.) Sacc., leaf-spot. Ca P. californica Ell. and Ev., leaf-spot. Calif.

Septoria marginata Heald and Wolf, leaf-spot.

A. nigrum, black maple.

Gloeosporium saccharinum Ell. and Ev., leaf-blight. Iowa. Rhytisma punctatum (Pers.) Fr., black-specked leaf-spot. W. Va. Taphrina sp., leaf blister. Ohio.

A. palmatum, Japanese maple.

Nectria cinnabarina Fr., canker. Conn., Pa. Pseudographium sp., twig canker. Wash.

A. pennsylvanicum, striped maple, *moosewood.

Fomes igniarius (L.) Fr., white heart-rot. Vt., N. Y. Gloeosporium acerinum West., leaf-blight. Vt.

G. apocryptum Ell. and Ev., anthracnose. Prophleospora aceris (Lib.) Sacc., leaf-spot. Pa.

Phyllosticta minutissima Ell. and Ev., leaf-spot. N. Y., Pa. Rhytisma punctatum (Pers.) Fr., tar-spot. W. Va. Septoria acerina Pk., leaf-spot. New England, N. Y., Pa. Uncinula circinata Cke. and Pk., powdery mildew. N. Y.

A. platanoides, Norway maple.

Gloeosporium apocryptum Ell. and Ev., anthracnose. Me., N. Y. Microstroma sp., leaf mildew. Ohio, Íll.

ACER-Continued.

A. platanoides, Norway maple—Continued.

Nectria cinnabarina Fr., canker. N. Y., N. J., Pa.
Phyllosticta minima (Berk. and Curt.) Ell. and Ev., leaf-spot. Va., Mo.
P. platanoides Sacc., leaf-spot. N. J.
Rhytisma acerinum (Pers.) Fr., tar-spot. N. Y.
Verticillium sp., wilt. General east of Miss. River.

· A. pseudoplatanus, sycamore maple.

Phyllosticta minima (Berk. and Curt.) Ell. and Ev., leaf-spot. Conn. Verticillium sp., wilt.

A. rubrum, red maple.

Cytospora chrysosperma Fr., canker. Wash.

Fomes igniarius (L.) Fr., white heart-rot. Mich. F. roseus (Alb. and Schw.) Fr., brown pocket rot. Gloeosporium aceris Cke., leaf-blight. S. C.

G. decolorans Ell. and Ev., leaf-blight.

Nectria cinnabarina Fr., canker. Va.

Phleospora aceris (Lib.) Sacc., leaf-spot. Ind.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Ind.

Phyllosticta minima (Berk. and Curt.) Ell. and Ev., leaf-spot. General east of Miss. River; Minn.

Rhytisma acerinum (Pers.) Fr., tar-spot. General east of Miss. River. Taphrina sp., leaf blister. N. Y., N. C.

Uncinula circinata Cke. and Pk., powdery mildew. General east of Miss.

Verticillium sp., wilt. N. Y., Md., Va.

A. saccharum, sugar maple.

Armillaria mellea (Vahl) Quel., root-rot. N. Y.
Fomes applanatus (Pers.) Wallr. (Ganoderma applanatum (Pers.) Pat.),
white streaked rot. N. Y.

F. fomentarius (L.) Fr., white sapwood rot. New England, N. Y. F. igniarius (L.) Fr., white heart-rot. N. Y. F. pinicola Fr., brown crumbly rot. N. Y. Gloeosporium sp., leaf-blight. N. Y. G. apocryptum Ell. and Ev., anthracenose. Pa.

G. hysterioideum Dearn. and Barth., leaf-blight. N. Y Hydnum septentrionale Fr., white sapwood rot. Mass.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-rot. Tex.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Ind.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Iowa. Phyllosticta minima (Berk. and Curt.) Ell. and Ev., leaf-spot. Mass., Pa.,

Polyporus sulphureus (Bull.) Fr., brown-checked wood-rot. N. Y. Rhytisma punctatum (Pers.) Fr., tar-spot. Pa.

Taphrina sp., leaf blister. Me., N. H., N. Y., Pa., Ga., Ind., Mich., Mo. Uncinula circinata Cke. and Pk., powdery mildew. N. Y., Ind., Iowa., Mo. Verticillium sp., wilt. Conn. south to Va. and Tenn.

A. spicatum, mountain maple.

Fomes applanatus (Pers.) Wallr. (Ganoderma applanatum (Pers.) Pat.), whitestreaked rot. N. Y.

F. igniarius (L.) Fr., white heart-rot. N. Y.
Phyllosticta minima (Berk. and Curt.) Ell. and Ev., leaf-spot. N. Y., Wis.
P. platanoides Sacc., leaf-spot. N. Y.
Rhytisma punctatum (Pers.) Fr., black-specked leaf-spot. New England,

N. Y., Pa.

Septoria acerina Pk., leaf-spot. W. Va. Uncinula circinata Cke. and Pk., powdery mildew. N. Y.

ACHRAS.

A. sapota, *sapote, sapodilla.

Pestalozzia scirrofaciens N. Brown, hard-gall. Fla.

ACONITUM.

Aconitum sp., monkshood

Erysiphe polygoni DC. Jowdery mildew. W. Va. Urocystis sorosporioides Koern., smut. Utah. Erysiphe polygoni DC. Uromyces aconiti Fckl., rust. Colo., Utah, Calif.

AESCULUS.

A. californica, California buckeye.

Exoascus aesculi (Ell. and Ev.) F. Patterson, witches'-broom. Calif. Gloeosporium carpogenum Cke., leaf-blight. Calif.

Phoradendron villosum Nutt., mistletoe. Oreg., Calif. Phyllactinia corylea (Pers.) Karst., powdery mildew. Calif.

Septoria aesculi (Lib.) West., leaf-spot. Calif.

A. glabra, Ohio buckeye.

Aecidium aesculi Ell. and Kell., rust. Nebr., Kans.

Guignardia aesculi (Pk.) V. B. Stewart, leaf-blotch. Miss. Valley and Ohio Valley.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Eastern States.

Phyllosticta aesculicola Sacc., leaf-spot. Va., Tex., Mo.

Septoria glabrae Ell. and Ev., leaf-spot. Ind.

Uncinula flexuosa Pk., powdery mildew. Miss. Valley and Ohio Valley.

A. hippocastanum, horsechestnut.

Botryosphaeria ribis Gross. and Dug., blight. N. Y., D. C.

Collybia velutipes Curt., white sap-rot. R. I.

Glomerella cingulata (Ston.) Spauld. and Schrenk, anthracnose. Conn., N. Y. Guignardia aesculi (Pk.) V. B. Stewart, leaf-blotch. General, especially east of Rocky Mts.

Nectria cinnabarina Fr., coral spot. New England, N. Y. Septoria sp., leaf-spot. Pa. Uncinula flexuosa Pk., powdery mildew. Mass., N. Y., N. J., Del., Ind.

A. octandra, vellow buckeve.

Guignardia aesculi (Pk.) V. B. Stewart, leaf-blotch. Tex., Iowa.

Phyllosticia aesculicola Sacc., leaf-spot. Tex. Uncinula flexuosa Pk., powdery mildew. Ala.

A. pavia, red buckeye.

Guignardia aesculi (Pk.) V. B. Stewart, leaf-blotch. Ala., Miss. Phyllosticta aesculicola Sacc., leaf-spot. Miss. Uncinula flexuosa Pk., powdery mildew. Ala.

AGROPYRON.

*A. repens, couchgrass, quackgrass.

Bacterium coronafaciens atropurpureum C. S. Reddy and James Godkin,

bacterial blight. Wis., N. Dak.
Claviceps purpurea (Fr.) Tul., ergot. Occurs scatteringly throughout the range of host.

Colletotrichum graminicolum (Ces.) Wils., anthracnose. N. Y., Pa., Minn.; probably other States.

Erysiphe graminis DC., powdery mildew. N. Y., Pa., Mich., Minn., Mont. Helminthosporium giganteum Heald and Wolf, leaf-spot. D. C., Md. H. sativum Pam., King, and Bak., spot-blotch. Wis., N. Dak. Ophiobolus graminis Sacc., take-all. N. Y.

Phyllachora graminis (Pers.) Fckl., tar-spot. General throughout range of host.

Phyllosticia sp., leaf-spot. Pa.

Puccinia clematidis (DC.) Lagh., leaf-rust. General.

P. coronata Cda., rust. Vt.

P. graminis Pers., stem-rust. General.

Pyrenophora tritici-repentis (Died.) Drechs., leaf-blight. Wis. Septoria agropyri Ell. and Ev., leaf-spot. Wis.

Tilletia earlei Griff., covered smut. N. Dak. Urocystis agropyri (Preuss) Schroet., smut. Vt., Mass., Conn., N. Y., Pa.

Ustilago hypodytes (Schl.) Fr., smut. N. Y.
U. macrospora Desm., smut. Mass., Wis., Iowa.
U. striaeformis (West.) Niessl, stripe-smut. N. Y.

AGROSTIS.

A. capillaris, bentgrass.

Puccinia graminis Pers., stem-rust. General east of Great Plains. Scolecotrichum graminis Fckl., leaf-spot. Ind. Ustilago striaeformis (West.) Niessl, stripe-smut. Conn., Miss. Valley.

A. palustris, redtop.

Claviceps purpurea (Fr.) Tul., ergot. Pa., Mich., Minn., N. Dak.
Colletotrichum graminicolum (Ces.) Wils., anthracnose. Pa.
Corticium vagum Berk. and Curt., root-rot. General.
Erysiphe graminis DC., powdery mildew. Minn.
Helminthosporium dematicideum Bub. and Wrob., leaf-spot. Conn., N. Y.
Ophiobolus graminis Sacc., take-all. N. Y.

Puccinia graminis Pers., stem-rust. General east of Great Plains.

Pythium sp., damping-off. Conn.
Sclerotium rhizodes Auer., Sclerotium blight. Conn.
Scolecotrichum graminis Fckl., leaf-spot. Pa., Wis. Urocystis agropyri (Preuss) Schroet., smut. Pa., Wis.

Ustilago striaeformis (West.) Niessl, stripe-smut. General east of Great Plains.

A. stolonifera, carpet bentgrass.

Corticium vagum Berk. and Curt., root-rot. General.

Helminthosporium giganteum Heald and Wolf, leaf-spot. D. C.

H. stenacrum Drechs., leaf-spot. Conn.

AILANTHUS.

A. glandulosa, tree-of-heaven.

Cercospora glandulosa Ell. and Kell., leaf-spot. Ala., Ill., Kans., Nebr., Tex. Nectria cinnabarina Fr., canker. N. J., Kans.

ALLIUM.

A. ascalonicum, shallot.

Colletotrichum circinans (Berk.) Vogl., smudge.

Heterodera radicicola (Greef) Muell., root-knot. Peronospora schleideni Ung., downy mildew. La.

A. cepa, onion.

Aspergillus niger Tiegh., black-mold. General.

Bacillus carotovorus L. R. Jones (Erwinia carotovora (Jones) Com. S. A. B.), soft-rot. General.

Botrytis sp., gray-mold. General.
B. allii M. T. Munn, neck-rot. N. Y., Ohio, Ill., Mich., Wis., Pacific Northwest.

B. byssoidea Walker, mycelial neck-rot. Conn., Ill., Wis. B. squamosa Walker, small sclerotial neck-rot. Ill., Wis.

Colletotrichum circinans (Berk.) Vogl., smudge. General east of Great

Corticium vagum Berk. and Curt., stem-rot. Ohio, Wash.

Cuscuta sp., dodder. Ill., Wis., Calif.

Fusarium sp., root-rot. Frequent occurrence.

F. cepae J. Hanzawa, bulb rot. Ill.

F. malli Taub., pink-root. Occurs in widely scattered States.

Heterodera radicicola (Greef) Muell., root-knot. Tex., Ind. Macrosporium porri Ell., mold. New England, Miss., Ind., Utah. M. sarcinula parasiticum Thuem., black stalk-rot. General.

Peronospora schleideni Ung., downy mildew. Puccinia porri (Sow.) Wint., rust. Conn. Pythium debaryanum Hesse, damping-off. M

Mass.

Sclerotium cepivorum Berk., white-rot. Va., Ky., Oreg. S. rolfsii Sacc., stem-rot. Ala.

Urocystis cepulae C. C. Frost, smut. General.

ALLIUM—Continued.

A. sativum, garlic.

Macrosporium sarcinula parasiticum Thuem., black stalk-rot. La. Sclerotium cepivorum Berk., white-rot. Oreg. S. rolfsii Sacc., stem-rot.

Tylenchus dipsaci (Kuehn) Bast., bulb nematode. Calif.

A. schoenoprasum, chives.

Puccinia porri (Sow.) Wint., rust. Conn.

ALNUS.

A. incana, speckled alder.

Cylindrosporium vermiforme Davis, leaf-spot. Cylindrosporium vermyorme Davis, icas spillew. Me., Erysiphe aggregata (Pk.) Farl., powdery mildew. Me., Minn. Minn. Wis. Me., N. Y., Wis.

Humenochaete agglutinans Ell., stem girdling. Pa.

Phyllactinia corylea (Pers.) Karst., powdery mildew. New England. N. Y..

Taphrina robinsoniana Gies., catkin deformation. N.Y., Md., Va.

*A. rhombifolia, white alder.

Fomes igniarius (L.) Fr., white heart-rot. Common in host range. Melampsoridium alni (Thuem.) Diet., rust. Calif.

*A. rubra, alder.

Cercosporella alni Dearn. and Barth., leaf-spot. Exoascus sp., catkin deformation. Wash., Oreg. Wash., Oreg.

Fomes applanatus (Pers.) Wallr. (Ganoderma applanatum (Pers.) Pat.), white-streaked rot. Wash.

Gnomonia dni Plow., leaf-spot. Calif.
Gnomoniala tubiformis (Tode) Sacc., black-spot. Oreg.
Melampsoridium alni (Thuem.) Diet., rust. Calif.

Microsphaera alni (Wallr.) Wint., powdery mildew. Wash., Phyllactinia corylea (Pers.) Karst., powdery mildew. Wash. Wash., Oreg.

Polystictus hirsutus (Wulf.) Fr., white-rot. Septoria alnifolia Ell. and Ev., leaf-spot. Wash., Oreg.

A. rugosa, hazel alder.

Erysiphe aggregata (Pk.) Farl., powdery mildew. N. Y., W. Va. Exoascus tosquinetii Sacc., catkin deformation. Me., Mass., Ala. Gnomoniella tubiformis (Tode) Sacc., black-spot. Pa. Microsphaera alni (Wallr.) Wint., powdery mildew. Ala.

Mycosphaerella hippocastani (Otto Jaap) Kleb., leaf-spot. N. Y. Phyllactinia corylea (Pers.) Karst., powdery mildew. Ala., Ohio. Taphrina robinsoniana Gies., catkin deformation. Md., Va.

*A. sinuata, alder.

Microsphaera alni (Wallr.) Wint., powdery mildew. Alaska. Phyllachora sp., leaf-spot. Wash.

A. tenuifolia, mountain alder.

Cylindrosporium sp., leaf-spot. Mont.

Exoascus spp., catkin deformation. Mont., Idaho, Oreg.

E. tosquinetii Sacc., catkin deformation. Idaho.

Fomes igniarius (L.) Fr., white heart-rot. Mont. Gnomoniella tubiformis (Tode) Sacc., black-spot. Oreg.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Colo., N. Mex., Idaho,

Polystictus hirsutus (Wulf.) Fr., white-rot.

ALTHAEA.

A. rosea, hollyhock.

Alternaria sp., leaf-spot. Del., Mich., Nebr.
Ascochyta althaeina Sacc. and Bizz., leaf-spot. N. Y.
A. parasitica Fautr., leaf-spot. Conn., Del., W. Va.
Cercospora althaeina Sacc., leaf-spot. General east of Great Plains.

C. kellermanii Bub., leaf-spot. Ind., Ohio. C. nebulosa Sacc., leaf-spot. Nebr.

ALTHAEA—Continued.

A. rosea, hollyhock—Continued.

Colletotrichum malvarum (Braun and Casp.) E. A. Southworth, anthracnose. N. Y., Ohio, Ind., Iowa.

Heterodera radicicola (Greef) Muell., root-knot.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), rootrot. Tex.

Phyllosticta althaeina Sacc., leaf-spot. N. Y., W. Va., Ohio. Puccinia hibisciata (Schw.) Kell., rust. Nebr. P. malvacearum C. G. Bertero, rust. General. P. sherardiana Koern., rust. Calif.

Septoria fairmani Ell. and Ev., leaf-spot. N. Y.

AMARYLLIS.

A. belladonna, belladonna-lily.

Botrytis sp., rot. Calif.

Cercospora amaryllidis Ell. and Ev., leaf-spot. La.

AMELANCHIER.

Amelanchier sp., shadblow (*serviceberry, *juneberry, *shadbush, *saskatoon) Bacillus amylovorus (Burr.) Trev. (Erwinia amylovora (Burr.) Com. S. A B.), blight. Wash.

Dimerosporium collinsii (Schw.) Thuem. General.
Erysiphe polygoni DC., powdery mildew. Mont.
Fabraea maculata (Lév.) Atk., leaf-blight. Ala., Ind., N. Dak., Kans., Mont., Idaho.

Mont, Idano.

Gymnosporangium blasdaleanum (Diet. and Holw.) Kern, rust. Oreg., Calif.

G. botryapites (Schw.) Kern, rust. Mass., Conn., N. Y., N. J., Pa.

G. clavariaeforme (Jacq.) DC., rust. N. Y. to Del., west to Utah.

G. corniculans Kern, rust. Vt. to Iowa, south to W. Va.

G. germinale (Schw.) Kern, rust. New England; N. Y., Mich., Wis.

G. inconspicuum Kern, rust. Colo., N. Mex., Utah.

G. juvenescens Kern, rust. Northern Great Plains States; Wis., Idaho.

G. kernianum Bethel, rust. Oreg.

G. nelsoni Arth. rust. Booky Mt. States: Nebr.

G. nelsoni Arth., rust. Rocky Mt. States; Nebr.

G. nidus-avis Thax., rust. Mass. to Wis.; south to N. C.

Nummularia discreta (Schw.) Tul., blister canker. Mass., Ohio, Kans. Phyllactinia corylea (Pers.) Karst., powdery mildew. Wash. Phyllosticta innumerabilis Pk., leaf-spot. Nebr.

P. paupercula Pk., leaf-spot. Kans.
P. virginiana (Ell. and Hals.) Seaver, leaf-spot. N. Y., Pa., Wis.
Plowrightia morbosa (Schw.) Sacc., black-knot. Minn., Mont.
Podosphaera oxyacanthae (DC.) D By., powdery mildew. Mass., Minn., Mo., Nebr.

Sclerotinia amelanchieris J. M. Reade, fruit-rot, blight. N. Y.

S. gregaria B. F. Dana, blight. Wash.

AMMOPHILA.

A. arenaria, beachgrass.

Claviceps purpurea (Fr.) Tul., ergot. Mich. Ustilago striaeformis (West.) Niessl, stripe smut. New England Coast States.

AMORPHA.

A. fruticosa, indigobush.

Ala., Ill., Nebr., Kans. General east of Rocky Mts. Cercospora passaloroides Wint., leaf-spot. Uropyxis amorphae (Curt.) Schroet., rust.

AMPELOPSIS.

A. arborea, peppervine.

Cercospora arboriae Tharp, leaf-spot. Tex.

C. viticola (Ces.) Sacc., leaf-spot. La. Guignardia bidwellii (Ell.) Viala and Ravaz, black-rot. Miss.

A. cordata, heartleaf ampelopsis.

Cercospora truncata Ell. and Ev., leaf-spot. La. C. viticola (Ces.) Sacc., leaf-spot. Ala., La.

AMPELOPSIS—Continued.

A. quinquefolia, Virginia creeper.

Cercospora ampelopsidis Pk., leaf-spot. General east of Great Plains.

C. psedericola L. R. Tehon, leaf-spot. Ill.

C. pustula Cke., leaf-spot. Occurs in widely scattered States east of Great

Cladosporium herbarum Lk., die-back. N. J.

Guignardia bidwellii (Ell.) Viala and Ravaz, black-rot. General east of Great

Phyllosticta viticola (Berk. and Curt.) Thuem., leaf-spot.

Plasmopara viticola (Berk. and Curt.) Berl. and DeToni, downy mildew. Me., Ala., Wis., Iowa.

Septogloeum ampelopsidis (Ell. and Ev.) Sacc., leaf-spot. Ill, Wis., Iowa, Nebr.

Septoria ampelopsidis Ell., leaf-spot. Nebr. Uncinula necator (Schw.) Burr., powdery mildew. General east of Great Plains.

A. tricuspidata, *Boston ivy, Japanese creeper.

Cladosporium sp., die-back. N. J. Guignardia bidwellii (Ell.) Viala and Ravaz, black-rot. Atlantic Coast States; Tex.

AMYGDALUS.

A. communis, almond.

Armillaria mellea (Vahl) Quel., root-rot. Calif.

Bacillus amulovorus (Burr.) Trev. (Erwinia amulovora (Burr.) Com. S. A. B.). Mass.

Bacterium tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall. Ariz., Calif.

Cercospora circumscissa Sacc., shot-hole. Oreg., Calif.

Cladosporium carpophilum Thuem., scab. Calif.

Coryneum beijerinckii Oud., blight. Oreg., Calif.

Cyphella marginata McAlp., die-back. Oreg., Call.
Gloeosporium sp., fruit-spot and twig-spot. Calif.
Heterodera radicicola (Greef) Muell., root-knot. Ariz.
Pythiacystis citrophthora E. H. and R. E. Smith, brown-rot, die-back. Calif.
Sclerotinia fructicola (Wint.) Rehm (S. americana (Wormald) Norton and Ezekiel), brown-rot. Calif.

Tranzschelia punctata (Pers.) Arth., rust. Calif.

A. persica, peach.

Armillaria mellea (Vahl) Quel., root-rot. Miss., Tex., Ark., Ind., Oreg., Calif., Alaska.

Bacterium cerasi F. L. Griffin, gummosis. Oreg.

B. pruni EFS. (Phytomonas pruni (EFS.) Com. S. A. B.), bacterial spot. General east of Rocky Mts.

B. tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall. General.

Botrytis cinerea Auct., fruit-rot. Calif.

Cephalothecium roseum Cda., pink-rot. Md., Ill., Calif. Cercospora circumscissa Sacc., shot-hole. General.

C. consobrina Ell. and Ev., leaf-spot. La., Ill.

Cercosporella persicae Sacc., frosty mildew. General. Choanephora persicaria E. D. Eddy, fruit-rot. In storage.

Cladosporium carpophilum Thuem., scab. General.

Clitocybe monadelpha (Morgan) Sacc., root-rot. Fla., Ark., Mo.
Comandra pallida DC., bastard toadflax. Wash.
Coryneum beijerinckii Oud., blight. General, especially in Western States.
Cyphella marginata McAlp., die-back.

Diplodia natalensis Ev., gumming. Fla. Exoascus deformans (Berk.) Fckl., leaf-curl. General.

Fomes pinicola Fr., brown crumbly rot. Oreg.

F. roseus (Alb. and Schw.) Fr., brown pocket rot. Va. Fusarium spp., fruit-rot. Calif.

Ga. F. gemmiperda Aderh., bud-rot.

Glomerella cingulata (Ston.) Spauld. and Schrenk, bitter-rot. Fla., Ark., Ohio.

AMYGDALUS-Continued.

A. persica, peach—Continued.

Helminthosporium carpophilum Lév., pustular spot. N. Y., Ohio, Mich.,

Heterodera radicicola (Greef) Muell., root-knot. South Atlantic and Gulf States; Calif.

Lenzites saepiaria Fr., heart-rot. Oreg. Monilia sp., western brown-rot. Oreg.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.).

root-rot. Tex., N. Mex., Ariz.

Phoma persicae Sacc., stem canker. Mass., Conn., Pa., Del., Md., Va., Ohio, Mich.

Phyllosticta circumscissa Cke., leaf-spot. N. Y., N. J., Wash. Physalospora malorum (Pk.) Shear (P. cydoniae Am. Auct.), black-rot. Del., Ind.

Podosphaera oxyacanthae (DC.) D By., powdery mildew. General.

Polyporus lacteus Fr., sap-rot and heart-rot.

Pythiacystis citrophthora E. H. and R. E. Smith, die-back. Calif.

Rhizopus nigricans Ehr., black-mold rot. Conn., Del., Ga., Fla., Ark., Ill., Ind., Kans.

Sclerotinia cinerea (Bon.) Schroet. (Monilia oregonensis Barss and Posey), blossom blight. Pacific coast.

S. fructicola (Wint.) Rehm (S. americana (Wormald) Norton and Ezekiel), brown-rot. General.

brown-rot. General.

Sclerotium rolfsii Sacc., stem-rot (of seedlings). La.

Sphaerotheca pannosa (Wallr.) Lév., powdery mildew. General.

Stereum purpureum Pers., silver leaf. N. Y., Md.

Trametes carnea (Nees) Cke., wood-rot. Oreg.

Tranzschelia punctata (Pers.) Arth., rust. General.

Valsa leucostoma (Pers.) Fr., die-back. General.

Verticillium alboatrum Reinke and Berth., wilt. N. Y., N. J.

Chlorosis, nonpar. Southwest.
Gummosis, various causes. General.
Little peach, undet. East of Miss. River, especially Middle Atlantic States.
Phoney peach, undet. Central and southern Ga.
Rosette, undet. Tenn., Fla., S. C., Ga., Ala., Miss., La., Okla., Ark., Mo.,

Yellows, nonpar. East of Miss. River and north of Gulf States.

A. persica nectarina, nectarine.

Cladosporium carpophilum Thuem., scab. Conn., N. Y., Ill.

Exoascus deformans (Berk.) Fckl., leaf-curl. Wash.

Sclerotinia fructicola (Wint.) Rehm (S. americana Norton and Ezekiel), brown-rot. Conn., N. Y.

ANANAS.

A. sativus, pineapple.

Spegazzinia ornata Sacc. Fla. Thielaviopsis paradoxa (DeSeyn.) Hoehn., soft-rot. Fla. Red wilt, undet. Fla.

ANCHUSA.

A. capensis, Cape bugloss.

Puccinia dispersa Eriks., rust.

A. officinalis, common bugloss.

Puccinia dispersa Eriks., rust. Ind.

ANETHUM.

A. graveolens, dill.

Cercosporella anethi Sacc., leaf-spot. N. Dak.

ANN ONA.

A. cherimola, cherimoya.

Gloeosporium sp., anthracnose. Fla. Uredo cherimoliae Lagh., rust. Fla.

A. squamosa, sugar-apple.

Uredo cherimoliae Lagh., rust. Fla.

ANT RRHINUM.

A. majus, snapdragon.

Colletotrichum antirrhini F. C. Stewart, anthracnose. General east of Miss. River.

Corticium vagum Berk. and Curt., rot (of cuttings).

Fusarium sp., root and crown rot. Wash.

Heterodera radicicola (Greef) Muell., root-knot. D. C., Miss., Nebr.

Phyllosticta antirrhini Syd., leaf-spot, damping-off. Mass., N. Y., Va., Ind., Minn.

Puccinia antirrhini Diet. and Holw., rust. General.

Pythium sp., stem-rot, damping-off. N. Y.
Thielavia basicola (Berk. and Curt.) Zopf, black root-rot. N. J.

Verticillium alboatrum Reinke and Berth., wilt. Mass.

APTITM.

A. graveolens, celerv.

Bacillus carotovorus L. R. Jones (Erwinia carotovora (Jones) Com. S. A. B.) soft-rot. General.

Bacterium apii I. C. Jagger (Phytomonas apii (Jagger) Com. S. A. B.), bacterial leaf-spot. N. Y., Ind., Mich., Minn.
Botrytis sp., gray-mold rot. N. Y., Idaho, Calif.
Cercospora apii Fresen., early-blight. General.

Corticium vagum Berk. and Curt., root-rot. General.

Fusarium sp., pink-root. Fla.

F. sp., root-rot. N. J., Fla., Ohio, Calif.
F. sp., vellows. Conn., Mass., N. Y., N. J., Pa., Ohio, Mich., Ind., Minn.

Heterodera radicicola (Greef) Muell., root-knot. N. J., Va., N. C., S. C.,

Fla., Ark., Ind., Kans., Calif.

Phoma apiicola Speg., root-rot. Ohio, Mich. Phyllosticta apii Hals., leaf-spot. N. J., Del. Pythium debaryanum Hesse, damping-off. Conn. Sclerotinia minor I. C. Jagger, drop. N. Y., Pa., Fla. S. sclerotiorum (Lib.) Mass., foot-rot. General.

Septoria apii Rostr., late-blight. General Bacterial heart-rot. East of Great Plains. Black-heart, undet. N. Y., Pa., Fla., La., Calif.

Crinkle, nonpar. Pa.

Hollow-stem, nonpar. Pa., Calif. Mosaic, undet. Mass., N. Y., N. J., Ind., Minn.

*A. graveolens rapaceum, celeriac.

Cercospora apii Fresen., early-blight. Conn. Phoma apiicola Speg., root-rot. N. Y. Septoria apii Rostr., late-blight. Conn., N. Y.

AQUILEGIA.

Aquilegia spp., columbine.

Erysiphe polygoni DC., powdery mildew. Conn., N. Y., Ind., Ohio, Ill-

Gloeosporium aquilegiae Thuem., leaf-spot. Tex.

Puccinia clematidis (DC.) Lagh., rust. Ind., Mont., Colo., Utah, Idaho, Oreg., Wash., Calif.

Sclerotinia sclerotiorum (Lib.) Mass., crown-rot. Del.

Urocystis sorosporioides Koern., rust. Utah.

ARACHIS.

A. hypogaea, peanut.

Bacterium solanacearum EFS. (Phytomonas solanaceara (EFS.) Com-S. A. B.), bacterial wilt. N. C.

Botrytis sp., stem-rot. Tenn. Cercospora personata (Berk. and Curt.) Ell. and Ev., leaf-spot. General where crop is grown.

Corticium vagum Berk. and Curt., stem-rot. N. C., Fla.

Fusarium vasinfectum Atk., wilt. Va., Ala.
Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), rootrot.

Phoma sp., stem-rot. Ala.

ARACHIS-Continued.

A. hypogaea, peanut—Continued.

Puccinia arachidis Speg., rust. Fla. Sclerotium rolfsii Sacc., stem-rot. General in South. Thielavia basicola (Berk. and Br.) Zopf, black root-rot

ARALIA.

A. spinosa, devils-walkingstick.

Cercospora atromaculans Ell. and Ev., leaf-spot. Phyllosticta everhartii Sacc. and Syd., leaf-spot. W. Va.

ARBUTUS.

A. menziesii, madrone.

Exobasidium vaccinii (Fckl.) Wor., gall. Calif.

Mycosphaerella arbuticola Pk., leaf-spot. Pacific coast. Phyllosticta fimbriata Ell. and Ev., leaf-spot. Oreg.

Pucciniastrum sparsum (Wint.) Ed. Fischer, rust. Pacific coast.

Rhytisma arbuti Phill., tar-spot. Pacific coast.

ARCTOSTAPHYLOS.

Arctostaphylos spp., bearberry, manzanita.

Exobasidium vaccinii (Fckl.) Wor., red leaf-spot. Colo., Oreg., Wash.,

Phoradendron villosum Nutt., mistletoe. Oreg., Calif.

Pucciniastrum sparsum (Wint.) Ed. Fischer, rust. Pacific coast.

ARISTOLOCHIA.

A. serpentaria, Virginia snakeroot.

Cercospora serpentaria Ell. and Ev., leaf-spot. Del., Ala.

ARONIA.

Aronia spp., chokeberry.

Bacillus amylovorus (Burr.) Trev. (Erwinia amylovora (Burr.) Com. S. A. B.), blight. W. Va.

Cercospora mali Ell. and Ev., leaf-spot. Ala.

C. piri Farl., leaf-spot. N. H., Wis.

Gymnosporangium clavariaeforme (Jacq.) DC., rust. Mass.

G. davisti Kern, rust. Me., Mich., Wis.
G. germinale (Schw.) Kern, rust. Me., Mass.
G. transformans (Ell.) Kern, rust. Mass., Pa., N. J.

Phyllosticta arbutifolia Ell. and Mart., leaf-spot. N. J.

ARUNDINARIA.

Arundinaria sp., bamboo, cane.

Puccinia arundinariae Schw., rust. Tex.

A. macrosperma, southern cane.

Puccinia arundinariae Schw., rust. S. C.

A. tecta, small cane.

Puccinia arundinariae Schw., rust. S. C., Miss., La.

ASCLEPIAS.

A. tuberosa, butterflyweed, *pleurisy root.

Cercospora asclepiadorae Ell. and Kell., leaf-spot. Phyllosticta tuberosa Ell. and Mart., leaf-spot. Puccinia jamesiana (Pk.) Arth., rust. Okla., Iowa, Kans. Uromyces howei Pk., rust. Del., Fla., Ill., Iowa, Kans.

ASIMINA.

A. triloba, papaw.

Cercospora asiminae Ell. and Kell., leaf-spot. Ala., Miss., Kans. Phleospora asiminae Ell. and Morgan, leaf-blotch. Ohio, Ill., Mo., Kans. Phyllosticta asiminae Ell. and Kell., leaf-spot. General.

ASPARAGUS.

A. officinalis, asparagus.

Armillaria mellea (Vahl) Quel., root-rot. Oreg.

Botrytis sp., blight. N. Y., Calif.

Cercospora asparagi Sacc., leaf-spot. Del., Va., Ala., Tex., Nebr., Calif.

C. caulicola Wint., leaf-spot. Md., S. C., Ga., Ala., Mo.

Cladosporium fasciculare (Pers.) Fr. S. C.

Colletotrichum sp., anthracnose. Conn., Ill. Corticium vagum Berk. and Curt., root-rot. Mass., N. Y., Pa., N. J., Mich., N. Dak., Wash.

Fusarium sp., dwarfing, stem-rot. Mass., Conn., N. Y., N. J., Ill., Minn.

Calif. Puccinia asparagi DC., rust. General.

Dwarfing, undet. N. J. Fasciation, undet. Conn., Calif. Leopard spot, undet. Md., Nebr.

AVENA.

A. sativa, oats.

Bacterium coronafaciens Charlotte Elliott (Phytomonas coronafaciens (Elliott)

Com. S. A. B.), halo leaf-blight. General.

Claviceps purpurea (Fr.) Tul., ergot. Iowa, Minn., N. Dak., Kans., Colo., Wash.

Colletotrichum graminicolum (Ces.) Wils., anthracnose. General east of Great Plains. Erysiphe graminis DC., powdery mildew. Scattered, especially in Pacific

States.

Fusarium culmorum leteius Sherb., seedling blight. Oreg. Gibberella saubinetii (Mont.) Sacc., scab. Scatteringly east of Great Plains. Helminthosporium avenae Eidam, leaf-spot. Widely distributed.

Leptosphaeria avenaria G. F. Weber, speckled blotch. Ky., Minn., Wis. Phyllachora graminis (Pers.) Fckl., black-spot. Nebr.

Puccinia coronata Cda., crown-rust. General.

P. graminis Pers., stem-rust. General. Scolecotrichum graminis Fckl., leaf-spot.

Ustilago avenae (Pers.) Jens., loose smut. General.

U. levis (Kell. and Sw.) Magn., covered smut. General.

Blast, undet. General.

AZALEA.

Azalea spp., azalea.

Corticium vagum Berk. and Curt., stem-rot. Ga.

Exobasidium vaccinii (Fckl.) Wor., gall. Atlantic Coast and Gulf States,

Microsphaera alni (Wallr.) Wint., powdery mildew. Conn., N. Y., Pa. Pucciniastrum myrtilli (Schum.) Arth., rust. Conn., Ga., Atlantic Coast States.

Ramularia angustata Pk., leaf-spot. N. Y. Septoria solitaris Ell. and Ev., leaf-spot. Calif. Synchytrium vaccinii F. Thomas, red-gall. N. J.

BAMBUSA.

Bambusa sp., bamboo.

Cladosporium graminum (Pers.) Cda. S. C. Coniosporium shiraianum (Syd.) Bub. Fla. Helminthosporium sp., leaf-spot. Fla. Puccinia melanocephala Syd., rust. Fla.

BEGONIA.

Begonia sp., begonia.

A phelenchus olesistus Ritzema Bos, nematode (nursery). N. Y., Pa.
Bacterium tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall. Miss.
Botrytis sp., blight. Ind., Ill.
Cercospora sp., leaf-spot. Fla., Tex.
Gloeosporium sp., anthracnose. Fla., La.

BEGONIA—Continued.

Begonia sp., begonia-Continued.

Heterodera radicicola (Greef) Muell., root-knot. Ohio, Ind., Nebr., Calif. (greenhouse).

Thielavia basicola (Berk. and Br.) Zopf, black root-rot. Mass., Ohio.

B. aestivale, spicebush.

Hymenochaete agglutinans Ell. Appalachian Mts. Phoradendron flavescens (Pursh) Nutt., mistletoe. Easter Phyllosticta linderae Ell. and Ev., leaf-spot. Del., W. Va. P. lindericola Ell. and Ev., leaf-spot. W. Va. Eastern States.

BERBERIS.

B. canadensis, Allegheny barberry.

Puccinia graminis Pers., rust. Va., W. Va.

B. thunbergii, Japanese barberry.

Verticillium alboatrum Reinke and Berth., wilt. N. Y. Bacterial leaf-spot, undet. N. Y., Minn.

B. vulgaris, common barberry.

Puccinia graminis Pers., rust. General wherever host occurs. Bacterial leaf-spot, undet. N. Y., Wis., Iowa, Nebr., Wash.

BETA.

B. vulgaris, beet.

Actinomyces scabies (Thax.) Gues., scab. Frequent where beets are grown. Bacterium teutlium H. A. Metcalf, soft-rot. Nebr. B. tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall. Conn., Pa., Wis., Idaho.

Cercospora beticola Sacc., Teaf-spot. General.

Corticium vagum Berk, and Curt., root-rot. Occurs scatteringly, especially throughout the Northern States.

Fusarium culmorum leteius Sherb., seedling blight. Pacific coast.

Heterodera radicicola (Greef) Muell., root-knot. Southern States, Ark., Ind., Kans., Colo., Calif. Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.),

root-rot. Tex.

Peronospora schachtii Fckl., downy mildew. N. Y., Calif.
Phoma betae (Oud.) Frank, root-rot and leaf-spot. N. J., N. C., Mich.,
Wis., N. Dak., S. Dak., Kans., Colo., N. Mex., Wash., Oreg.
Puccinia sarcobati (Pk.) Bethel, rust. Utah.

Pythium aphanidermatum (Edson) Fitz., damping-off. Wis.

Fylitum apparatuermatum (Edson) Filz., damping-on. Wis.
P. debaryanum Hesse, damping-off. Conn.
Sclerotinia sclerotiorum (Lib.) Mass., watery soft-rot. Conn., Ill.
Sclerotium rolfsii Sacc., stem-rot. S. C., Ga., La.
Septoria betae West., leaf-spot. Mass., Del., Ind.
Tylenchus dipsaci (Kuehn) Bast., stem nematode. Kans.
Uromyces betae (Pers.) Lév., rust. Colo., Oreg., Calif.
Curly-top, undet. Tex., Colo., Utah, Calif.

B. vulgaris, sugar beet.

Actinomyces scabies (Thax.) Gues., scab. Conn., Ohio, Idaho.
Bacterium aptatum N. Brown and C. Jamieson (Phytomonas aptatum (Brown and Jamieson) Com. S. A. B.), leaf-spot. Utah.
B. beticolum EFS., N. Brown, and Town. (Phytomonas beticolum (EFS., Brown, and Town.) Com. S. A. B.), tuberculosis. Va., Kans., Colo., Utah.
B. tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall. Ohio, Utah, Colo., Idaho, Calif.
Cercospora beticola Sacc., leaf-spot. General.
Carticium naum Berk and Curt. root-rot. General.

Corticium vagum Berk. and Curt., root-rot. General. Fusarium sp., root-rot. Ind., Mich., Kans., Western States. Heterodera radicicola (Greef) Muell., root-knot. Ohio, Texas, Western States. H. schachtii A. Schmidt, sugar-beet nematode. Wyo., Colo., Utah, Idaho,

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), rootrot. Tex.

BETA-Continued.

B. vulgaris, sugar beet—Continued.

Peronospora schachtii Fckl., downy mildew. Calif.

Phoma betae (Oud.) Frank, root-rot and leaf-spot. General. Puccinia sarcobati (Pk.) Bethel, rust. Colo., Utah. Pythium sp., damping-off. Ohio, Wis., Utah, Idaho, Calif.

P. aphanidermatum (Edson) Fitz., damping-off, W Sclerotium rolfsii Sacc., stem-rot. Ga., Tex., Calif. Wis., Utah.

Tylenchus dipsaci (Kuehn) Bast., stem nematode. T. penetrans Cobb, nematode. Utah.

Uromyces betae (Pers.) Lév., rust. Calif.

Curly-top, undet. Western States.

Mosaic, undet. Ind., Kans., Nebr., Colo., Utah, Calif.

B. vulgaris cicla, Swiss chard.

Actinomyces scabies (Thax.) Gues., scab. Pa., Wis. Cercospora beticola Sacc., leaf-spot. General.

Corticium vagum Berk. and Curt., root-rot. N. Y.

Heterodera radicicola (Greef) Muell., root-knot. Va., La.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), rootrot. Tex.

Sclerotium rolfsii Sacc., stem-rot. S. C., La. Uromyces betae (Pers.) Lév., rust. Calif.

B. vulgaris macrorhiza, mangel-wurzel.

Bacterium tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall. Pa.

Cercospora beticola Sacc., leaf-spot. Conn., Minn., Iowa.

Corticium vagum Berk. and Curt., root-rot. Wash.

Phoma betae (Oud.) Frank, root-rot and leaf-spot. N. Y., Wis., Minn. Pythium debaryanum Hesse, damping-off. Conn., Mich., Wis., Kans., Colo.,

Sclerotium rolfsii Sacc., stem-rot. La.

BETULA.

B. alba, white birch.

Magnusiella flava (Farl.) Sadeb., yellow leaf blister. Northeastern States. Melanconium bicolor Nees, canker. N. Y., Ind. Polyporus betulinus (Bull.) Fr., powdery sapwood rot. Vt., N. Y.

B. lenta, sweet birch.

Fomes igniarius (L.) Fr., white heart-rot.

Gloeosporium betularum Ell. and Mart., leaf-spot. Pa., N. J., Ill.

Microsphaera alni (Wallr.) Wint., powdery mildew. N. H.

Phyllactinia corylea (Pers.) Karst., powdery mildew. N. Y. Phyllosticta betulae Ell. and Ev., leaf-spot. N. Y. Septoria microsperma Pk., leaf-spot. Pa., W. Va.

B. lutea, vellow birch.

Fomes applanatus (Pers.) Wallr. (Ganoderma applanatum (Pers.) Pat.), whitestreaked rot. Me., N. Y. F. fomentarius (L.) Fr., white sapwood rot. New England, N. Y., Pa. F. igniarius (L.) Fr., white heart-rot. Vt., N. Y.

Melampsoridium betulae (Schum.) Arth., rust. N. H., Ind.
Melamconium bicolor Nees, canker. N. Y.
Microsphaera alni (Wallr.) Wint., powdery mildew. Mass.
Nectria coccinea (Pers.) Fr., associated with canker. Mich.
Polyporus betulinus (Bull.) Fr., powdery sapwood rot. N. Y.

B. nigra, river birch.

Fomes igniarius (L.) Fr., white heart-rot. Conn. Glocosporium betularum Ell. and Mart., leaf-spot. Mass., Pa., Ind., Ill., Wis.

Nectria ditissima Tul., European canker. Pa.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Ind.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Ill., Mo.

B. occidentalis, western birch.

Fomes fomentarius (L.) Fr., white sapwood rot. F. igniarius (L.) Fr., white heart-rot. Mont.

BETULA-Continued.

B. occidentalis, western birch—Continued.

Gnomonia campylostyla Auer. Colo.

Melampsoridium betulae (Schum.) Arth., rust. Mont., Idaho.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Mont., Wyo. Septoria betulicola Pk., leaf-spot. Wash. Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot. Idaho.

B. papyrifera, canoe birch.

Exoascus betulinus (Rostr.) Sadeb., witches'-broom. Wis.
Fomes applanatus (Pers.) Wallr. (Ganoderma applanatum (Pers.) Pat.), white-streaked rot. Me., Minn. F. everhartii (Ell. and Gall.) Schrenk, white-rot. Minn.

F. fomentarius (L.) Fr., white sapwood rot. Mass., Minn. F. igniarius (L.) Fr., white heart-rot. Mich., Minn.

Gloeosporium betulae-papyriferae Dearn. and Overh., anthracnose. Pa. Magnusiella flava (Farl.) Sadeb., yellow leaf blister. Northeastern States. Melampsoridium betulae (Schum.) Arth., rust. Me.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Iowa. Polyporus betulinus (Bull.) Fr., powdery sapwood rot. Mass., Conn., Minn.

B. populifolia, gray birch.

Fomes fomentarius (L.) Fr., white sapwood rot. Me. Magnusiella flava (Farl.) Sadeb., yellow leaf blister. Northeastern States.

Melampsoridium betulae (Schum.) Arth., leaf-rust. Northeastern States.

Melanconium bicolor Nees, canker. N. Y.

Polyporus betulinus (Bull.) Fr., powdery sapwood rot. Northeastern

States.

Septoria betulina Pk., leaf-spot. Wis. Venturia ditricha (Fr.) Aderh. Me., N. Y.

BIGNONIA.

B. capreolata, crossvine.

Cercospora capreolata Ell. and Ev., leaf-spot. Dimerosporium tropicale Speg., sooty mold.

B. radicans, trumpetcreeper.

Cercospora pallida Ell. and Ev., leaf-spot. La. C. sordida Sacc., leaf-blight. General east of Great Plains, especially in the South.

Erysiphe cichoracearum DC., powdery mildew. Ill. Hendersonia peckii Clint. N. Y.

Microsphaera alni (Wallr.) Wint., powdery mildew. Va., Ala., Ohio, Ind.,

Phyllosticta tecomae Sacc., leaf-spot. Miss.

Septoria tecomae Ell. and Év., leaf-spot. W. Va., Tex.

B. campestris, rutabaga.

Albugo candida (Pers.) O. Kuntze, white-rust. Mass. Alternaria brassicae (Berk.) Sacc., black leaf-spot. Va.

Auteriaria orassicae (Berk.) Sacc., black leaf-spot. Va.

Bacterium campestre (Pam.) EFS. (Phytomonas campestre (Pam.) Com.
S. A. B.), black-rot. Va., Wis., Minn., Iowa.

Erysiphe polygoni DC., powdery mildew. Conn., Fla., Wash.

Heterodera radicicola (Greef) Muell., root-knot. Ala.

Mycosphaerella brassicicola (Fr.) Lindau, ring-spot. Calif.

Peronospora parasitica (Pers.) D By., downy mildew. Fla., Iowa.

Phoma lingam (Tode) Desm., black-leg. Ga.

Plasmodiorphora brassicae Wor., alubroot. Minn. N Dak.

Plasmodiophora brassicae Wor., clubroot. Minn., N. Dak.

B. oleracea, cabbage.

Albugo candida (Pers.) O. Kuntze, white-rust. Ky., Idaho. Alternaria brassicae (Berk.) Sacc., black leaf-spot. General. A. herculea (Ell. and Mart.) J. A. Elliott, gray leaf-spot. Calif.

Bacillus carotovorus L. R. Jones (Erwinia carotovora (Jones) Com. S. A. B.), soft-rot. General.

BRASSICA—Continued.

B. oleracea, cabbage—Continued.

Bacterium campestre (Pam.) EFS. (Phytomonas campestre (Pam.) Com. S. A.

B.), black-rot. General.
B. maculicolum McC. (P (Phytomonas maculicola (McC.) Com. S. A. B.), peppery leaf-spot. Conn., N. Y., Ala., Miss., La. Botrytis sp., gray-mold. N. Y., Calif., Alaska.

Cercospora bloxami Berk. and Br., leaf-spot. Fla., Tex., Ill.

C. cruciferarum Ell. and Ev., leaf-spot. Ala. Corticium vagum Berk. and Curt., wire-stem.

Mycosphaerella brassicicola (Fr.) Lindau, ring-spot. Oreg., Wash., Calif. Olpidium brassicae (Wor.) Dan., seedling blight. N. Y., Miss., Wis. Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.),

root-rot.

Peronospora parasitica (Pers.) D By., downy mildew. General.

Phoma lingam (Tode) Desm., black-leg. General, especially in Eastern States

Plasmodiophora brassicae Wor., clubroot. General. Pythium debaryanum Hesse, damping-off. Conn., Pa.

Sclerotinia sclerotiorum (Lib.) Mass., drop, watery soft-rot.

Sclerotium rolfsii Sacc., stem-rot. Ala., Tex.

Malnutrition, nonpar. Southern States, Long Island, Mass. Oedema, nonpar. N. Y.

Speck, undet. Frequent in stored cabbage.

Tipburn, nonpar. Ind.

B. oleracea acephala, kale, collards.

Albugo candida (Pers.) O. Kuntze, white-rust. Fla.

Alternaria brassicae (Berk.) Sacc., black leaf-spot. Southern States.

Bacterium campestre (Pam.) EFS. (Phytomonas campestre (Pam.) Com.
S. A. B.), black-rot. N. C., Ala.

Corticium vagum Berk. and Curt., stem-rot. Wash.

Fusarium conglutinans Woll., yellows. N. Y., N. C., S. C., Ind., Calif.

Heterodera radicicola (Greef) Muell., root-knot. N. Y., S. C., Ala.

Mycosphaerella brassicicola (Fr.) Lindau, ring-spot. Wash., Calif.

Peronospora parasitica (Pers.) D By., downy mildew. South Atlantic States: Oreg. States; Oreg.

Phoma lingam (Tode) Desm., black-leg. N. C., Ga.

Plasmodiophora brassicae Wor., elubroot. Conn., Va., N. C., Wash.

Sclerotium rolfsii Sacc., stem-rot. Miss.

B. oleracea botrytis, cauliflower.

Alternaria brassicae (Berk.) Sacc., black leaf-spot. N. Y., Fla., La., Calif. A. herculea (Ell. and Mart.) J. A. Elliott, gray leaf-spot. Calif. A. herculea (Ell. and Mart.) J. A. Elliott, gray leaf-spot.

Bacillus carotovorus L. R. Jones (Erwinia carotovora (Jones) Com. S. A. B.), soft-rot. Me., Mass., Va., Minn., Mo.
Bacterium campestre (Pam.) EFS. (Phytomonas campestre (Pam.) Com.

S. A. B.), black-rot. General, especially in States east of Miss. River.

B. maculicolum McC. (Phytomonas maculicola (McC.) Com. S. A. B.),
peppery leaf-spot. Conn., N. Y., Va., Ky., Fla.
Corticium vagum Berk. and Curt., stem-rot. La., Wash.
Fusarium conglutinans Woll., yellows. Del., Ind., Calif.
Mycosphaerella brassicicola (Fr.) Lindau, ring-spot. Mass., Oreg., Calif.
Peronospora parasitica (Pers.) D By., downy mildew. N. Y., Va., Mo.,
Colif Calif.

Phoma lingam (Tode) Desm., black-leg. N. Y.

Plasmodiophora brassicae Wor., clubroot. East of Miss. River and north of Va. and Ky.

Pythium sp., damping-off. Ohio, Oreg.

Sclerotinia sclerotiorum (Lib.) Mass., drop, watery soft-rot. Va., Miss., La., Calif.

BRASSICA-Continued.

B. oleracea caulorapa, kohlrabi.

Heterodera radicicola (Greef) Muell., root-knot. Ohio.

Peronospora parasitica (Pers.) D By., downy mildew. Va., Fla.

Plasmodiophora brassicae Wor., clubroot. Conn., Mass., N. Y.,

B. oleracea gemmifera, Brussels sprouts.

Bacillus carotovorus L. R. Jones (Erwinia carotovora (Jones) Com. S. A. B.), Minn. soft-rot.

Corticium vagum Berk. and Curt., stem-rot. La. Mycosphaerella brassicicola (Fr.) Lindau, ring-spot.

Phoma lingam (Tode) Desm., black-leg. N. Y. Plasmodiophora brassicae Wor., clubroot. Alaska.
Pythium debaryanum Hesse, damping-off. Minn.
Sclerotinia sclerotiorum (Lib.) Mass., drop, watery soft-rot.

B. pekinensis, petsai cabbage, Chinese cabbage.

Alternaria brassicae (Berk.) Sacc., black leaf-spot. Conn., Fla.
A. herculea (Ell. and Mart.) J. A. Elliott, gray leaf-spot. Fla., Calif.
Bacillus carotovorus L. R. Jones (Erwinia carotovora (Jones) Com. S. A. B.),

soft-rot. Conn.

Bacterium campestre (Pam.) EFS. (Phytomonas campestre (Pam.) Com.

S. A. B.), black-rot. Md. Cercospora bloxami Berk. and Br., leaf-spot. Fla.

Cercosporella albo-maculans (Ell. and Ev.) Sacc., leaf-spot. Cylindrosporium brassicae Fautr. and Roum., leaf-spot. Md., Mo.

Sclerotinia sclerotiorum (Lib.) Mass., drop. Mass.

Mosaic, undet.

B. rapa, turnip (white).

Albugo candida (Pers.) O. Kuntze, white-rust. Reported in seven scattered

Alternaria sp., black leaf-spot. Ind., Tex., Utah. A. herculea (Ell. and Mart.) J. A. Elliott, gray leaf-spot. N. J., Ohio, Fla., Ala.

Bacillus carotovorus L. R. Jones (Erwinia carotovora (Jones) Com. S. A. B.), soft-rot. Reported from widely scattered States.

Bacterium campestre (Pam.) EFS. (Phytomonas campestre (Pam.) Com. S. A.

B.), black-rot. Eastern States.

Cercosporella albo-maculans (Ell. and Ev.) Sacc., leaf-spot. General. Colletotrichum brassicae Schultz. and Sacc., leaf-spot. Ga.
C. higginsianum Sacc., leaf-spot. S. C., Ga., Fla., Ala., Miss.
Corticium vagum Berk. and Curt., stem-rot. Mass., Ohio, Wash.
Cylindrosporium brassicae Fautr. and Roum., leaf-spot. Ga.

Erysiphe polygoni DC., powdery mildew. Occurs in widely scattered States. Fusarium conglutinans Woll., yellows. Ind.
Heterodera radicicola (Greef) Muell., root-knot. S. C., Ga., Ala., Tex.

Peronospora parasitica (Pers.) D By., downy mildew. Frequent east of Great Plains.

Phoma napobrassicae Rostr., root-rot. Conn. Plasmodiophora brassicae Wor., clubroot. East of Great Plains; Colo., Wash.; especially in Northeastern States. Sclerotinia sclerotiorum (Lib.) Mass., drop, watery soft-rot. Conn., Tex.

Mosaic, undet. Ind.

BROMUS

B. inermis, *Hungarian bromegrass.

Bacterium coronafaciens atropurpureum C. S. Reddy and James Godkin, bacterial blight. Wis., N. Dak., S. Dak.
Claviceps purpurea (Fr.) Tul., ergot. Conn., Minn., Iowa, N. Dak., Nebr.
Erysiphe graminis DC., powdery mildew. Minn. Erysiphe graminis DC., powdery mildew.

Helminthosporium giganteum Heald and Wolf, leaf-spot. D. C. Phyllachora graminis (Pers.) Fckl., tar-spot. N. Dak. Pyrenophora bromi (Died.) Drechs., leaf-blotch. Pa., Wis., Minn., N. Dak. Rhynchosporium secalis (Oud.) Davis, scald. Wis.

Septoria bromi Sacc., leaf-blotch. Wis. S. bromigena Sacc., leaf-spot. N. Dak.

Ustilago bromivora (Tul.) Fisch., smut. Iowa, Oreg.

BROMUS—Continued.

*B. secalinus, chess.

Colletotrichum graminicolum (Ces.) Wils., anthracnose. Pa., Ohio. Ophiobolus graminis Sacc., take-all. N. Y.
Puccinia clematidis (DC.) Lagh., leaf-rust. N. C., Ind., Oreg., Calif. P. graminis Pers., stem-rust. W. Va., Ind., Wis., Iowa, Kans. Septoria bromi Sacc., leaf-blotch. Wis.

Ustilago bromivora (Tul.) Fisch., smut. Pacific coast.

BUDDLEIA.

Buddleia sp., butterflybush.

Heterodera radicicola (Greef) Muell., root-knot, Miss.

*BULBILIS.

B. dactyloides, buffalo grass.

Cercospora seminalis Ell. and Ev., leaf-spot. S. Dak., Kans., Colo. Helminthosporium turcicum Pass., leaf-blight. Kans.

Puccinia kansensis Ell. and Barth., rust. Nebr., Kans.

Tilletia buchloeana Kell. and Syd., covered smut. Tex., Kans. Ustilago buchloes Ell. and Tr., loose smut. Nebr., N. Mex.

BUMELIA.

Bumelia sp., bumelia.

Cercospora lanuginosa Heald and Wolf, leaf-spot. Texas. Phyllosticta bumeliifolia Heald and Wolf, leaf-spot. P. curtisii (Sacc.) Ell. and Ev., leaf-spot. Fla. Ala., Miss., Tex. Septoria bumeliae Sacc., leaf-spot. Miss.

BUXUS.

B. sempervirens, box.

Macrophoma candollei (Berk. and Br.) Berl. and Vogl., leaf-blight. East of Miss. River.

Nectria rousselliana Tul., canker. N. J., Pa., Md.

Phyllosticta sp., leaf-spot. N. Y.

P. auerswaldii Allesch., leaf-spot. N. J.

CAJANUS.

C. indicus, pigeon-pea.

Uromyces dolicholi Arth., rust. Fla.

CALENDULA.

C. officinalis, calendula.

Corticium vagum Berk. and Curt., stem-rot. Ind. Heterodera radicicola (Greef) Muell., root-knot. W. Va. Puccinia emiliae P. Henn., rust. Ill., Mo., Nebr., Kans.

CALLICARPA.

C. americana, American beautyberry.

Cercospora callicarpae Cke., leaf-spot. Gulf States. Meliola cookeana Speg., sooty mold. Fla.

CALLISTEPHUS.

C. chinensis, China-aster.

Botrytis sp., stem-blight. Conn., Pa.

Coleosporium solidaginis (Schw.) Thuem., rust. Frequent east of Great

Corticium vagum Berk. and Curt., stem-rot. Me., Mass., N. Y., Mich., Wash.

Erysiphe cichoracearum DC., powdery mildew. Minn., Wash.

General in Northern States. Conn., W. Va. Fusarium conglutinans callistephi Beach, wilt.

Heterodera radicicola (Greef) Muell., root-knot. Conn., W. Va. Septoria callistephi W. O. Glover, leaf-spot. N. Y., Del., Ala., Ohio, Mich. Yellows, undet. General in Northern States.

CANNA.

C. indica, canna.

Bacterium cannae M. K. Bryan (Phytomonas cannae (Bryan) Com. S. A. B.), bacterial bud-rot. Conn., Ind. Fusarium sp., rot. Pa., Minn. Puccinia cannae (Wint.) P. Henn., rust. Ohio, Fla.

CANNABIS.

C. sativa, common hemp.

Botryosphaeria marconi (Cav.) V. K. Charles and A. Jenkins, wilt. Va. Botrytis cinerea Auct., rot. Va., Oreg.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.). rootrot. Tex.

Sclerotium rolfsii Sacc., stem-rot. S. C. Septoria cannabina Pk., leaf-spot. Iowa.

S. cannabis (Lasch) Sacc., leaf-spot. Ind., Ky., Minn.

CAPRIOLA.

C. dactylon, Bermuda grass.

Helminthosporium cynodontis G. B. Marignoni, leaf-spot.

H. giganteum Heald and Wolf, leaf-spot. Fla., Tex.

Puccinia cynodontis DeLac., rust. Frequent in Southern States. Ustilago cynodontis P. Henn., smut. Tex., Calif.

CAPSICUM.

C. annuum, redpepper.

Alternaria sp., fruit-rot. Frequent, especially in the South.

Bacillus carotovorus L. R. Jones (Erwinia carotovora (Jones) Com. S. A. B.), Fla., Mich.

Bacterium solanacearum EFS. (Phytomonas solanaceara (EFS.) Com. S. A. B.),

bacterial wilt. Pa., Va., N. C., La., Tex.

B. vesicatorium E. M. Doidge (Phytomonas exitiosa (Gardner and Kendrick)

Com. S. A. B.), bacterial spot. Tenn., Ga., Fla., Ind. Cercospora capsici Heald and Wolf, leaf and fruit spot. Ga., Fla., Tex., Calif.

Corticium vagum Berk. and Curt., stem-rot. Conn., N. J., Pa., Ga., La. Fusarium sp., wilt. Del., Tenn., Ark., Calif. F. annuum L. H. Leonian, wilt. N. Mex.

Glomerella cingulata (Ston.) Spauld. and Schrenk, anthracnose. General east of Miss. River, especially in the South; Tex.

Heterodera radicicola (Greef) Muell., root-knot. Fla., N. Mex.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-rot. Tex.

Phoma destructiva Plow., rot. Ga.
Phyllosticta sp., leaf-spot. N. J.
Phytophthora capsici L. H. Leonian, blight. N. Mex.

P. terrestris Sherb., fruit-rot. Ind.

Pythium debaryanum Hesse, fruit-rot. N. C.

Sclerotinia sclerotiorum (Lib.) Mass., damping-off. Conn.

Sclerotium bataticola Taub., fruit-rot. N. J.
S. rolfsii Sacc., stem-rot. South Atlantic and Gulf States.
Blossom-end rot, nonpar. Ga.
Mosaic, undet. Frequent in widely scattered States.

Sun scald, undet. N. J., Ind., Calif.

CARICA.

C. papaya, papaya.

Colletotrichum sp., fruit-rot. Fla. Heterodera radicicola (Greef) Muell., root-knot. Oidium caricae F. Noack, powdery mildew. Fla.

CARPINUS.

Carpinus sp., hornbeam.

Fomes igniarius (L.) Fr., white heart-rot. Vt. Fracchiaea calista (Berk. and Curt.) Sacc. Vt., Ala., Tex. Gnomoniella fimbriata (Pers.) Sacc., leaf-spot. N. Y., W. Va.

CARPINUS-Continued.

C. caroliniana, American hornbeam, blue beech.

Dermatea carpinea (Pers.) Rehm, canker. N. Y., Pa. Fusarium carpineum Davis. Wis.

Dermatea carpinea (Fers.) Kenm, canker. N. 1., Fa.

Fusarium carpineaum Davis. Wis.
Gloeosporium robergei Desm., leaf-spot. Pa.
Gnomoniella fimbriata (Pers.) Sacc., leaf-spot. N. Y.

Microsphaera alni (Wallr.) Wint., powdery mildew. Ind., Iowa.
Phyllactinia corylea (Pers.) Karst., powdery mildew. Ohio, Ind., Tex.
Phyllosticta hesperidearum (Catt.) Penz., leaf-spot. Colo. (greenhouse).

Septoria carpinea Davis, leaf-spot. Wis.

CASTANEA.

C. dentata, chestnut.

Endothia parasitica (Murr.) P. J. and H. W. Anderson, blight. New England, N. Y., Atlantic Coast States except Florida; also W. Va., Ky., Tenn., Ala., Ohio, Ind., Mich., Iowa, Mo., Nebr. Fusicoccum sp., canker. Calif. (Castanea sp.).

Marssonia ochroleuca (Berk. and Curt.) Humph., leaf-spot. Me. to N. C., Ohio.

Melanconis modonia Tul., black canker. Ohio.

Microsphaera alni (Wallr.) Wint., powdery mildew. Conn., N. Y., Pa. Monochaetia desmazierii Sacc., large leaf-spot. Va., N. C., Ga. Phoradendron flavescens (Pursh) Nutt., mistletoe. Eastern States.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Mass., N. Y., Ind. Phyllosticta castanea Ell. and Ev., leaf-spot. Md., W. Va.

P. fusispora Ell. and Ev., leaf-spot. Ala.
Physalospora malorum (Pk.) Shear (P. cydoniae Am. Auct.), twig-blight. Čentral Eastern States.

Polyporus croceus Fr., white-piped rot. Eastern States.

P. frondosus Fr., straw-colored rot. P. spraguei Berk., heart-rot. Ind.

P. sulphureus (Bull.) Fr., brown-checked wood-rot. N. Y.

Septoria ochroleuca Berk. and Curt., leaf-spot. Mass., Kans. Strumella coryneoidea Sacc. and Wint., canker. Northeastern States.

C. japonica, Japanese chestnut.

Endothia parasitica (Murr.) P. J. and H. W. Anderson, blight. Middle Atlantic States, Mass., Conn., N. Y., W. Va., N. C. Septoria gilletiana Sacc., leaf-spot. La.

C. pumila, chinquapin.

Endothia parasitica (Murr.) P. J. and H. W. Anderson, blight. N. H., Conn., Pa., Md., Va., W. Va., Tenn., S. C., Ga.

Microsphaera alni (Wallr.) Wint., powdery mildew. Va., N. C.

Polyporus croceus Fr., white-piped rot. Ark.

C. sativa, Spanish chestnut.

Endothia parasitica (Murr.) P. J. and H. W. Anderson, blight. Middle Atlantic States, Conn., N. Y., Ohio.

Marssonia ochroleuca (Berk. and Curt.) Humph., leaf-spot. Conn., N. J. Microsphaera alni (Wallr.) Wint., powdery mildew. Mass.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-

Phyllactinia corylea (Pers.) Karst., powdery mildew. Ohio.

CASTANOPSIS.

C. chrysophylla, giant chinquapin.

Dothidella castanopsidis Dearn., leaf-spot. Oreg.

CATALPA.

Catalpa sp., catalpa.

Cercospora catalpae Wint., leaf-spot. Mass., N. J., Fla., Ala., La., Mo., Tex. Cladosporium sp., leaf-spot. Ind.

Collybia velutipes Fr., heart-rot. Ind.
Gloeosporium catalpae Ell. and Ev., leaf-spot. N. Y., Pa.
Heterodera radicicola (Greef) Muell., root-knot. Ala., Fla.
Macrosporium catalpae Ell. and Mart., leaf-spot. Frequent east of Miss. River; Mo.

CATALPA-Continued.

Catalpa sp., catalpa—Continued.

Microsphaera alni vaccinii (Schw.) Salm., powdery mildew. General east of Great Plains.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), rootrot. Tex.

Phyllactinia corylea (Pers.) Karst., powdery mildew. S. C., Ohio, Ind., Ill. Phyllosticta catalpae Ell. and Mart., leaf-spot. General east of Great Plains. Polyporus catalpae Schrenk, brown butt-rot. Mass.

Polystictus versicolor (L.) Fr., vellowish wood-rot. Mass., Ohio, Ind., Nebr. Thielavia basicola (Berk. and Br.) Zopf, black root-rot. Ohio. Mosaic, undet. Md.

CELASTRUS.

C. scandens, American bittersweet.

Cercospora melanochaeta Ell. and Ev., leaf-spot. N. Dak., Nebr., Kans. Microsphaera alni (Wallr.) Wint., powdery mildew. Wis. Phyllactinia corylea (Pers.) Karst., powdery mildew. General. Phyllosticta celastri Ell. and Ev., leaf-spot. W. Va. Ramularia celastri Ell. and Mart., leaf-spot. General.

CELTIS.

Celtis sp., hackberry, sugarberry.

Cylindrosporium celtidis Earle, leaf-spot. C. defoliatum Heald and Wolf, leaf-blight. Tex.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-Tex.

Phleospora celtidis Ell. and Mart., leaf-spot. Mass., Mo., Kans. Phoradendron flavescens (Pursh) Nutt., mistletoe. Tex., Ind., Ariz. Phyllosticta celtidis Ell. and Kell., leaf-spot. East of Great Plains; N. Mex. Pseudoperonospora celtidis (M. B. Waite) Wils., downy mildew. D. C. Ramularia celtidis Ell. and Kell., leaf-spot. Frequent east of Great Plains. Septogloeum celtidis Dearn., leaf-spot. N. Y. Septoria celti-gallae W. R. Gerard, leaf-spot. N. Y. Septoria celti-gallae W. R. Gerard, leaf-spot. N. Y. S. gigaspora Ell. and Ev., leaf-spot. Mass., Kans. Sphaeratheca phytoplophila Kell and Sw. powdery mildew. East of Great.

Sphaerotheca phytoptophila Kell, and Sw., powdery mildew. East of Great Plains.

Uncinula confusa Mass., powdery mildew. N. C.
U. parvula Cke. and Pk., powdery mildew. General.
U. polychaeta (Berk. and Curt.) Ell., powdery mildew. Mass., Ala., Miss., Tex.

CEPHALANTHUS.

C. occidentalis, buttonbush.

Ascochyta cephalanthi Ell. and Ev., leaf-spot. La. Cercospora perniciosa Heald and Wolf, leaf-blight. To Coniothyrium cephalanthi Ell. and Ev., leaf-spot. La.

N. H., Ala., Ind., Ill.

Microsphaera alni (Wallr.) Wint., powdery mildew. N. H., Ala., Ind., Il Phyllactinia corylea (Pers.) Karst., powdery mildew. Ind. Phyllosticta cephalanthi Tharp, leaf-spot. Tex. Puccinia cephalanthi (Seym.) Barth., rust. N. Y., Ind., Ill., Kans. Ramularia cephalanthi (Ell. and Kell.) Heald, leaf-spot. Southern States.

Septoria cephalanthi Ell. and Kell., leaf-spot. Kans.

CERCIS.

C. canadensis, redbud, *Judas-tree.

Cercospora cercidicola Ell., leaf-spot. General throughout range of host.

C. chionea Ell. and Kell., leaf-spot. Ind., Ill., Kans.

Pestalozzia sp., leaf-spot. Fla.

Phyllosticta cercidicola Ell. and Ev., leaf-spot. W. Va., Ind.

P. siliquastri Sacc. and Speg., leaf-spot.

*C. occidentalis, California redbud.

Cercospora cercidicola Ell., leaf-spot. Tex.

58433—26†——3

CHAETOCHLOA.

C. italica, millet.

Helminthosporium sp., leaf-spot. Minn.

Piricularia grisea (Cke.) Sacc., leaf-spot. Pa., Va., Ala., Tex., Ind., Ill., Iowa, Mo.

Sclerospora graminicola (Sacc.) Schroet., downy mildew. North-Central

Ustilago crameri Koern., smut. General east of Great Plains.

CHAMAECYPARIS.

C. nootkatensis, *Alaska cedar, Nootka cypress.

Gymnosporangium nootkatensis (Trel.) Arth., rust. Wash., Oreg.

C. thyoides, whitecedar.

Gymnosporangium botryapites (Schw.) Kern, rust. Atlantic Coast States from Mass. to Ala.

G. ellisii (Berk.) Farl., rust. Atlantic Coast States from Mass. to Del.; also Fla. and Ala.

G. transformans (Ell.) Kern, rust. Mass., N. J.

CHAYOTA.

C. edulis, chayote.

Cercospora cucurbitae Ell. and Ev., leaf-spot. Fla. Colletotrichum lagenarium (Pass.) Ell. and Hals., anthracnose. Fla.

CHENOPODIUM.

*C. ambrosioides anthelminticum, wormseed.

Cercospora anthelmintica Atk., leaf-spot. Ala., Miss., Tex. C. chenopodii Fr., leaf-spot. Tex. Heterodera radicicola (Greef) Muell., root-knot. Ala.

Phyllosticta ambrosioides Thuem. and Syd., leaf-spot. Del., N. J., La., Ind.

CHIONANTHUS.

C. virginica, white fringetree.

Phyllactinia corylea (Pers.) Karst., powdery mildew. M Phyllosticta chionanthi Thuem., leaf-spot. N. J., W. Va. Septoria chionanthi Cke., leaf-spot. S. C. S. eleospora Sacc., leaf-spot. Tex.

CHRYSANTHEMUM.

Chrysanthemum sp., chrysanthemum.

Aphelenchus sp., bud nema. Md.

Aprelenchus sp., bud nema. Mu. Ascochyta chrysanthemi F. L. Stevens, ray-blight. N. C., S. C. Botrytis sp., bud-rot. Mass., Ky., Minn., Mo. B. cinerea Auct., flower deformation. N. Y. Cercospora chrysanthemi Heald and Wolf., leaf-spot. Tex.

Corticium vagum Berk. and Curt., stem-rot. Md.

Cylindrosporium chrysanthemi Ell. and Dearn., leaf-spot. Mass., Conn.,

Pa., N. C., Ga., Miss.

Erysiphe cichoracearum DC., powdery mildew. General.
Fusarium sp., wilt. Mass., N. J., Ala., Fla., Ohio, Kans.
Heterodera radicicola (Greef) Muell., root-knot. Miss., Tex., Wash.
Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.),
root-rot. Tex.

Phyllosticta chrysanthemi Ell. and Dearn., leaf-spot. Mass., Fla.

Puccinia chrysanthemi Roze, rust. General.

Septoria chrysanthemella Cav., leaf-spot. General east of Great Plains.

S. leucanthemi Sacc. and Speg., leaf-spot. Conn.

Verticillium alboatrum Reinke and Berth., wilt. N. J.

Chlorosis, nonpar. Pa., Md. Mosaic, undet. Md., Ohio.

Yellows, undet. Mich.

CICHORIUM.

C. endivia, endive.

Corticium vagum Berk. and Curt., damping-off. Pythium debaryanum Hesse, root-rot. Conn. Sclerotinia sclerotiorum (Lib.) Mass., watery soft-rot. La.

C. intybus, chicory.

Puccinia hieracii (Schum.) Mart., rust. Vt., N. Y., Wis., Wash., Oreg.

CINNAMOMUM.

C. camphora, camphor-tree.

Diplodia sp., canker. Tex.

Gloeosporium camphorae Sacc., leaf-spot. Fla., Ala., Miss., Tex. Glomerella cingulata (Ston.) Spauld. and Schrenk, anthracnose. Ga., Fla. Tulenchus penetrans Cobb, nematode. Fla.

CITRULLUS.

C. vulgaris, watermelon.

Bacillus tracheiphilus EFS. (Erwinia tracheiphila (EFS.) Com. S. A. B.), bacterial wilt. General.

Cercospora citrullina Cke., leaf-spot. Ind. to Tex. and eastward. Colletorichum lagenarium (Pass.) Ell. and Hals., anthracnose. east of Rocky Mts.; also in Calif. Corticium vagum Berk. and Curt., fruit-rot. La., Wash., Oreg. Diplodia sp., Diplodia rot. Southern States. Erysiphe cichoracearum DC., powdery mildew. Va. Fusarium sp., Fusarium rot. Va., Kans.

F. niveum EFS., wilt. Southern two-thirds of United States. Heterodera radicicola (Greef) Muell., root-knot. S. C., Ala., Tex., Calif. Macrosporium cucumerinum Ell. and Ev., leaf-blight. Occurs scatteringly, mostly east of Rocky Mts.

M. sarcinula parasiticum Thuem., leaf-spot. Kans.

Mycosphaerella citrullina (C. O. Smith) Gross., gummy stem-blight. N. Y., Va., S. C., Tenn., Fla., La., Mo.

Pseudoperonospora cubensis (Berk. and Curt.) Rostew., downy mildew.

Atlantic Coast and Gulf States; W. Va., Ohio, Mich., Ark., Calif.

Pythium sp., blossom-end rot.

Mosaic, undet. Del., Md., Mich.

P. aphanidermatum (Edson) Fitz., rot.
P. abbaryanum Hesse, rot. Va., Mich.
Sclerotinia sclerotiorum (Lib.) Mass., watery soft-rot.
Sclerotium rolfsii Sacc., stem-rot. Southern States.

Septoria citrulli Ell. and Ev., leaf-spot. N. Y.
Thielavia basicola (Berk. and Br.) Zopf, black root-rot. Utah, Oreg.

CITRUS.

Citrus spp., citrus.

Tylenchus semipenetrans Cobb, nematode. Fla., Calif.

C. aurantifolia, lime.

Bacterium citri (Hasse) Jehle (Phytomonas citri (Hasse) Com. S. A. B.), citrus canker. Fla.

Colletotrichum gloeosporioides Penz. (Glomerella cingulata (Ston.) Spauld. and Schrenk), associated with citrus wither-tip. Fla.

Gloeosporium limetticolum R. F. Clausen, lime wither-tip. Fla.

Phytophthora terrestris Sherb., foot-rot. Fla.

Sphaeropsis tumefaciens Hedges, knot. Fla.

Sporotrichum citri Butl. (Sphaceloma fawcettii A. Jenkins), scab. Fla.

C. aurantium, sour, or Seville, orange.

Armillaria mellea (Vahl) Quel., root-rot. Calif.

Bacterium citrarefaciens H. A. Lee (Phytomonas citrarefaciens (Lee) Com. S. A. B.), citrus blast. Calif.

B. citri (Hasse) Jehle (Phytomonas citri (Hasse) Com. S. A. B.), citrus canker. Fla., Miss.

Colletotrichum gloeosporioides Penz. (Glomerella cingulata (Ston.) and Schrenk), associated with citrus wither-tip. Fla., Tex., Calif. Gloeosporium intermedium Sacc., anthracnose. Fla.

CITRUS-Continued.

C. aurantium, sour, or Seville, orange—Continued.

Penicillium glaucum Lk., blue-mold rot.

Phomopsis citri Fawc., stem-end rot, melanose. Fla., Ala. Phytophthora terrestris Sherb., foot-rot. Fla.

Sporotrichum citri Butl. (Sphaceloma fawcettii A. Jenkins), scab. Gulf States. Chlorosis, undet. Calif. Die-back, undet. Fla.

C. grandis, grapefruit.

Bacterium citrarefaciens H. A. Lee (Phytomonas citrarefaciens (Lee) Com. S. A. B.), citrus blast. Calif.

B. citri (Hasse) Jehle (Phytomonas citri (Hasse) Com. S. A. B.), citrus

canker. Fla., Ala., La., Miss.

Cephaleuros virescens Kze., algal leaf-spot. Fla.

Colletotrichum gloeosporioides Penz. (Glomerella cingulata (Ston.) Spauld. and Schrenk), associated with citrus wither-tip. Fla., Ala., Tex., Miss.

Diplodia natalensis Ev., stem-end rot. Fla.

Phomopsis citri Fawc., stem-end rot, melanose. Fla., Tex., Ariz. Pythiacystis citrophthora E. H. and R. E. Smith, brown-rot. Ariz.

Sclerotium rolfsii Sacc., seedling blight (greenhouse). Ala.

Sporotrichum citri Butl. (Sphaceloma fawcettii A. Jenkins), scab. Fla., Ala.

Tylenchus semipenetrans Cobb, root nematode. Fla., Calif.

Die-back, undet. Fla. Gummosis, undet.

C. limonia, lemon.

Alternaria sp., fruit-rot. Calif.

Armillaria mellea (Vahl) Quel., root-rot. Calif.
Bacterium citrarefaciens H. A. Lee (Phytomonas citrarefaciens (Lee) Com. S. A. B.), citrus blast. Calif.

B. citri (Hasse) Jehle (Phytomonas citri (Hasse) Com. S. A. B.), citrus canker. Fla., Ala., La., Tex.

Botrytis cinerea Auct., gray-mold rot. Calif.

Colletotrichum gloeosporioides Penz. (Glomerella cingulata (Ston.) Spauld. and Schrenk), associated with citrus wither-tip. Fla., Tex.

Gloeosporium spegazzinii Sacc., leaf-scorch. Fla. Oospora citri-aurantii C. O. Smith, sour-rot. Calif.

Penicillium sp., blue-mold rot. Calif.
Phomopsis californica Fawc., rot. Calif.

P. citri Fawc., stem-end rot, melanose. Fla.

Phyllosticta hesperidearum (Catt.) Penz., leaf-spot. Colo. (greenhouse). Phytophthora terrestris Sherb., foot-rot. Fla.

Phytophthora terrestris Sherb., foot-rot. Fla.
Pythiacystis citrophthora E. H. and R. E. Smith, brown-rot. N. J. (greenhouse), Calif.

Sclerotinia sclerotiorum (Lib.) Mass., cottony rot. Calif.

Sporotrichum citri Butl. (Sphaceloma fawcettii A. Jenkins), scab.

Die-back, undet. Fla. Gummosis, undet. Calif.

Internal decline, nonpar. Calif.

C. nobilis, king orange, tangerine.

Bacterium citri (Hasse) Jehle (Phytomonas citri (Hasse) Com. S. A. B.), citrus canker. Tex.

Colletotrichum gloeosporioides Penz. (Glomerella cingulata (Ston.) Spauld. and Schrenk), associated with citrus wither-tip. Miss., Calif.

Oidium tingitaninum C. N. Carter, powdery mildew. Calif.

Phomopsis citri Fawc., stem-end rot, melanose. Fla. Sporotrichum citri Butl. (Sphaceloma fawcettii A. Jenkins), scab. Fla., Miss. Die-back, undet. Fla.

C. nobilis unshiu, Satsuma orange.

Alternaria citri N. B. Pierce, black-rot. Ala., Calif.

Bacterium citri (Hasse) Jehle (Phytomonas citri (Hasse) Com. S. A. B.), Fla. citrus canker.

Colletotrichum gloeosporioides Penz. (Glomerella cingulata (Ston.) Spauld. and Schrenk), associated with citrus wither-tip. Ala.

Diplodia natalensis Ev., stem-end rot. Ala., Miss.

Oospora sp., soft-rot. Ala., Miss.

CITRUS-Continued.

C. nobilis unshiu, Satsuma orange—Continued.

Penicillium digitatum (Fr.) Sacc., green-mold rot. P. italicum C. Wehmer, blue-mold rot. Ala. Ala.

Phomopsis citri Fawe., melanose, stem-end rot. Fla., Ala., Miss

Die-back, undet. Fla. Gummosis, undet. Fla.

C. sinensis, orange.

Alternaria citri N. B. Pierce, black-rot. Fla., Ariz., Calif.
Bacterium citrarefaciens H. A. Lee (Phytomonas citrarefaciens (Lee) Com. S. A. B.), citrus blast. Calif.
B. citri (Hasse) Jehle (Phytomonas citri (Hasse) Com. S. A. B.), citrus canker.

Gulf States.

Cerospora aurantia Heald and Wolf, leaf-spot.

Colletotrichum gloeosporioides Penz. (Glomerella cingulata (Ston.) Spauld. and Schrenk), die-back, associated with citrus wither-tip. Gulf States.

Diplodia natalensis Ev., stem-end rot. Fla. Fusarium limonis Briosi, foot-rot.

Oospora sp., soft-rot. La.

Penicillium sp., blue-mold. General.

Phomopsis citri Fawc., melanose, stem-end rot. Fla., Ala., Miss., La.

Phyllosticta adusta Ell. and Mart., leaf-spot. Fla.

Phytophthora terrestris Sherb., foot-rot. Fla. Pythiacystis citrophthora E. H. and R. E. Smith, brown-rot.

Sclerotinia sp., Calif.

Septobasidium sp., girdle. Fla., La. Sporotrichum citri Butl. (Sphaceloma fawcettii A. Jenkins), scab. Fla., Miss.,

Stemphylium citri F. Patterson and V. K. Charles, end-rot. Ariz.

Tylenchus semipenetrans Cobb, root nematode. Fla., Calif.

Fla., Calif. Chlorosis, undet, Die-back, undet. Miss., Calif. Greasy spot, undet. Fla. Fla., Calif. Gummosis, undet.

Mottled-leaf, frenching, undet. Fla., Miss., Calif.

Psorosis, California scaly bark, undet. Fla., Ariz., Calif. Scaly bark, attributed to Cladosporium herbarum citricolum Fawc.

C. trifoliata, hardy orange.

Bacterium citri (Hasse) Jehle (Phytomonas citri (Hasse) Com. S. A. B.) citrus canker. Ala., Fla.

Colletotrichum gloeosporioides Penz. (Glomerella cingulata (Ston.) Spauld. and Schrenk), associated with citrus wither-tip. Fla., Tex.

Diplodia aurantii Catt., twig-blight. Phoma sp., damping-off. Tex.

Phomopsis citri Fawc., melanose. Fla., Miss.

Die-back, undet. Fla.

CLEMATIS.

Clematis sp., clematis, virgins-bower.

Ascochyta clematidina (Thuem.) emend. W. O. Glover, stem-rot and leaf-N. Y., Wis.

Bacterium tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall. Minn.

Cercospora rubigo Cke. and Hark., leaf-spot. Wash., Calif.

C. squalidula Pk., leaf-spot. Frequent in widely scattered States. Cylindrosporium clematidis Ell. and Ev., leaf-spot. Conn., N. Y., Del.,

Miss., Wis.

Erysiphe polygoni DC., powdery mildew. Frequent in widely scattered States.

Ala., Ohio, Wash., Oreg. Heterodera radicicola (Greef) Muell., root-knot. Tex.

Phleospora adusta Heald and Wolf, leaf-blight. Puccinia clematidis (DC.) Lagh., rust. General.

P. stromatica Berk. and Curt., rust. Ala.

Ramularia clematidis Dearn. and Barth., leaf-spot. Mont.

Septoria jackmani Ell. and Ev., leaf-spot. N. Y.

COCOS.

C. nucifera, coconut.

Alternaria sp., leaf-spot. Fla.

Colletotrichum sp., anthracnose. Fla. Cytospora palmarum Cke., leaf-spot.

Diplodia epicocos Cke., stem-rot. Fla.

Fla. Fusarium sp., dry-rot.

Gloeosporium nanoti Prill. and Del., anthracnose. Fla.

Pestalozzia palmarum Cke., leaf-spot. Fla. Phytophthora faberi Maub., bud-rot. Fla. Pythium sp., wilt. Fla.

Ramularia sp., leaf-spot. Fla.

Thielaviopsis paradoxa (DeSeyn.) Hoehn., root-rot. Fla.

COFFEA.

C. arabica, coffee.

Glomerella cingulata (Ston.) Spauld. and Schrenk, anthracnose. Greenhouse, D. C.

Stilbum flavidum Cke., leaf-spot.

COLOCASIA.

C. esculenta, dasheen.

Bacillus carotovorus L. R. Jones (Erwinia carotovora (Jones) Com. S. A. B.), soft-rot. Storage.

Diplodia spp., Java black-rot. Storage.

Fusarium solani (Mart.) Sacc., associated with various rots. Fla.

Heterodera radicicola (Greef) Muell., root-knot. Fla.

Sclerotium rolfsii Sacc., storage rot.

COMPTONIA.

C. asplenifolia, sweetfern.

Cronartium comptoniae Arth., rust. N. H., Vt., N. Y. to N. C., Wis.

CORNUS.

Cornus spp., dogwood.

Ascochyta cornicola Sacc., leaf-spot. Ohio, Wis.

Botrytis sp., twig-blight. Pa. Cercospora cornicola Tr. and Earle, leaf-spot. Ga., Fla., Miss., Tex. Diaporthe albocarnis Ell. and Ev., canker. Colo.

Dimerosporium pulchrum Sacc., sooty mold. Miss., Tex., Ill., Iowa. Microsphaera alni (Wallr.) Wint., powdery mildew. Frequent in Northeastern States.

Myxosporium nitidum Berk, and Curt., twig-blight. Frequent in Northeastern States.

Phoma corni Fckl., canker. Minn.
Phyllactinia corylea (Pers.) Karst., powdery mildew. General.

Phyllosticta corni West., leaf-spot.

P. globifera Ell. and Ev., leaf-spot. Kans.

Physalospora corni Ell. and Ev. Colo.

Septoria cornicola Desm., leaf-spot. General.

C. florida, flowering dogwood.

Cercospora cornicola Tr. and Earle, leaf-spot. Miss.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), rootrot.

Phyllactinia corylea (Pers.) Karst., powdery mildew. S. C., Ala., Ind., Ill., Iowa.

Phyllosticta globifera Ell. and Ev., leaf-spot. Del., W. Va. P. starbaeckii Sacc. and Syd., leaf-spot. Pa. Septoria cornicola Desm., leaf-spot. Pa., S. C., Ind., Ky.

C. nuttalli, Pacific dogwood.

Fomes igniarius Fr., white wood-rot.

Nectria galligena Bres., European canker. Wash., Oreg.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Wash., Oreg.

CORYLUS.

Corulus sp., filbert, hazelnut.

Bacterium sp., blight. Oreg. Cryptosporella anomala (Pk.) Sacc., blight. Conn. to N. C.

Cylindrosporium vermiforme Davis, leaf-spot. Wis.

Glocosporium coryli Ell. and Ev., leaf-spot. Me., N. J., Pa., Wash., Oreg. Gnomoniella coryli (Batsch) Sacc., leaf-spot. General in Northern States. Microsphaera alni (Wallr.) Wint., powdery mildew. Conn., Ill., Iowa, N. Dak.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Northeastern States.

Phyllosticta coryli West., leaf-spot. N. J., Ind., Iowa, Mo. Septoglocum profusum (Ell. and Ev.) Sacc., leaf-spot. Miss. Septoria corylina Pk., leaf-spot. Mass., N. Y., Mich., Pacific coast. Taphrina coryli T. Nishida, leaf-curl. Pa., Wis.

COSMOS.

Cosmos sp., cosmos.

Bacterium solanacearum EFS. (Phytomonas solanaceara (EFS.) Com. S. A. B.), bacterial wilt. N. C.

Erysiphe cichoracearum DC., powdery mildew. Nebr.

Phomopsis stewartii Pk., stem canker. Ohio, Mich., S. Dak.

Mosaic, undet. Fla.

CRATAEGUS.

Crataegus spp., hawthorn.

Bacillus amylovorus (Burr.) Trev. (Erwinia amylovora (Burr.) Com. S. A. B.), blight. Conn., N. Y., Ill., Utah, Wash., Oreg. Cercospora crataegi Heald and Wolf, leaf-spot. Tex.

Cercosporella mirabilis Pk., leaf-spot. Colo.

Cladosporium carpophilum Thuem., scab. Iowa.

Cylindrosporium brevispina Dearn., leaf-spot. Mont., Idaho, Calif.

C. crataegi Ell. and Ev., leaf-spot. W. Va.

Fabraea maculata (Lév.) Atk., leaf-spot. General.

Fomes applanatus (Pers.) Wallr. (Ganoderma applanatum (Pers.) Pat.),

white-streaked rot. Calif.

Gymnosporangium betheli Kern, rust. N. Mex., Northern Rocky Mt. States; Pacific Northwest.

G. blasdaleanum (Diet. and Holw.) Kern, rust. Oreg., Calif. G. exiguum Kern, rust. Tex.

G. floriforme Thax., rust. Ala., Ark. G. germinale (Schw.) Kern, rust. General east of Great Plains.

G. globosum Farl., rust. General east of Great Plains.

G. hyalinum (Cke.) Kern, rust. N. C. to Fla.
G. trachysorum Kern, rust. N. C., Ala., La., Miss., Tex.
G. tubulatum Kern, rust. Mont., Idaho.
Hendersonia crataegi Brenckle, leaf-spot. N. Dak.
H. foliorum Fckl., leaf-spot. Tex.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Tex.

Phyllactinia corylea (Pers.) Karst., powdery mildew. N. Y., Fla., Ala., Ill., Iowa, Wash.

Phyllosiicta crataegi (Cke.) Sacc., leaf-spot. N. Y., S. C., N. Dak., N. Mex. P. grisea Pk., leaf-spot. N. Y. P. solitaria Ell. and Ev., blotch. N. J.

Podosphaera oxyacanthae (DC.) D By., powdery mildew. East of Great

Venturia inaequalis (Cke.) Aderh., scab. N. Y.

CROTON.

Croton sp., croton.

Cercospora capitati Tharp, leaf-spot. S. C., Ala., Tex. C. crotonis Ell. and Ev., leaf-spot. Kans. C. crotonis Ell. and Ev., leaf-spot. Kans. C. maritima Tr. and Earle, leaf-spot. Miss.

Gloeosporium sp., leaf-spot. N. J. Phakopsora crotonis (Burr.) Arth., rust. General in southern half of the United States.

Uromyces graminicola Burr., rust. Ill., Kans.

CUCUMIS.

C. melo, cantaloupe, muskmelon.

Bacillus melonis Gidd. (Erwinia melonis (Gidd.) Com. S. A. B.), soft-rot. Vt., Mass.

B. tracheiphilus EFS. (Erwinia tracheiphila (EFS.) Com. S. A. B.), bacterial General.

Cercospora cucurbitae Ell. and Ev., leaf-spot. Del.

Cladosporium cucumerinum Ell. and Arth., scab. Mass., Conn., N. J., Del., Ohio, Mich., Calif.

Colletotrichum lagenarium (Pass.) Ell. and Hals., anthraenose. General

east of Great Plains.

Erysiphe cichoracearum DC., powdery mildew. Va., Fla.

Fusarium niveum EFS. wilt. General in southern half of the United States. Heterodera radicicola (Greef) Muell., root-knot. General in sandy soils in Southern States.

Macrosporium cucumerinum Ell. and Ev., leaf-blight. General.

Mycosphaerella citrullina (C. O. Smith) Gross., gummy stem-blight. N. Y. Phyllosticta cucurbitacearum Sacc., leaf-spot. Ohio.

Pseudoperonospora cubensis (Berk. and Curt.) Rostew., downy mildew. General east of Great Plains, especially in Gulf and Atlantic Coast States. Sclerotinia sclerotiorum (Lib.) Mass., timber rot. Mass.

Sclerotium rolfsii Sacc., stem-rot. South Atlantic and Gulf States.

Septoria cucurbitacearum Sacc., leaf-spot. N. Y., Wis. Mosaic, undet. Frequent in widely scattered States.

C. sativus, cucumber.

Acremonium sp., leaf-blight. Mass., Ohio.

Bacillus sp., soft-rot. Fla.

B. melonis Gidd. (Erwinia melonis (Gidd.) Com. S. A. B.), soft-rot. Ala, B. tracheiphilus EFS. (Erwinia tracheiphila (EFS.) Com. S. A. B.), bacterial General. wilt.

Bacterium lachrymans EFS. and Mary K. Bryan, angular leaf-spot. East of Great Plains; Colo., Calif. (in greenhouse).

Cercospora sp., leaf-spot. Ind.

Cladosporium cucumerinum Ell. and Arth., scab. General.

Colletotrichum lagenarium (Pass.) Ell. and Hals., anthracnose. East of Great Plains, Čolo., Ariz., Calif. Corticium vagum Berk. and Curt., stem-rot.

Ohio, Wash. dew. Widespread, especially Erysiphe cichoracearum DC., powdery mildew. in Northern States.

Fusarium niveum EFS., wilt. Frequent east of Great Plains, especially in the South; N. Mex., Calif.

Heterodera radicicola (Greef) Muell., root-knot. In sandy soils in Southern States.

Macrosporium cucumerinum Ell. and Ev., leaf-blight. General. Mycosphaerella citrullina (C. O. Smith) Gross., gummy stem-blight. Phyllosticta cucurbitacearum Sacc., leaf-spot. Ohio. Fla.

Pseudoperonospora cubensis (Berk. and Curt.) Rostew., downy mildew. General east of Great Piains, especially in Gulf and Atlantic Coast States; Calif.

Pythium aphanidermatum (Edson) Fitz., cottony leak. N. C., S. C. P. debaryanum Hesse, damping-off: Mass., N. Y., Ohio, Mich., Minn. Scierotinia sclerotiorum (Lib.) Mass., timber rot. Widespread. Sclerotium rolfsii Sacc., stem-rot. S. C. Stemphylium cucurbitacearum Geo. Osner, leaf-spot. Ohio, Ind.

Mosaic, undet. General.

CUCURBITA.

Cucurbita sp., gourd.

Bacterium lachrymans EFS, and Mary K. Bryan, angular leaf-spot.

Cercospora cucurbitacea Ell. and Gall., leaf-spot. Ala.

Colletotrichum lagenarium (Pass.) Ell. and Hals., anthracnose. Ill.

Pseudoperonospora cubensis (Berk. and Curt.) Rostew., downy mildew. Ohio, Ind.

C. maxima, squash; C. pepo condensa, summer squash.

Bacillus tracheiphilus EFS. (Erwinia tracheiphila (EFS.) Com. S. A. B.), bacterial wilt. East of Great Plains; Colo., Calif.

CUCURBITA-Continued.

C. maxima, squash; C. pepo condensa, summer squash—Continued.

Cercospora cucurbitae Ell. and Ev., leaf-spot. N. J., Ohio.
Choanephora cucurbitarum (Berk. and Rav.) Thax., brown-rot, blossom blight. Mass., Conn., N. Y., N. C., S. C., Fla., Ohio, Tex.
Cladosporium cucumerinum Ell. and Arth., scab. Me.

Colletotrichum lagenarium (Pass.) Ell. and Hals., anthracnose. Mass., Conn., Pa., Md., Ohio, Minn.

Corticium vagum Berk. and Curt., stem-rot. Mass.

Erysiphe cichoracearum DC., powdery mildew. Conn., Del., N. Mex., Utah. Fusarium niveum EFS., wilt. N. C., Tex., Ohio, Nebr., N. Mex., Ariz., Calif. Heterodera radicicola (Greef) Muell., root-knot. Tex. Macrosporium cucumerinum Ell. and Ev., leaf-blight. N. Y., Minn.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), rootrot. Tex.

Pseudoperonospora cubensis (Berk. and Curt.) Rostew., downv mildew. Conn., Del., Va., S. C., Tex.

Rhizopus sp., black-mold rot. N. Y., Tex. Septoria cucurbitacearum Sacc., leaf-spot. Ind.

Mosaic, undet. Vt., Conn., N. J., Pa., La., Tex., Minn.

C. pepo, pumpkin.

Bacillus tracheiphilus EFS. (Erwinia tracheiphila (EFS.) Com. S. A. B.), bacterial wilt. Ohio, Calif.

Botrytis cinerea Auct., gray-mold rot. Tex. Cercospora cucurbitae Ell. and Ev., leaf-spot.

Corticium vagum Berk. and Curt., stem-rot. Tex. Erysiphe cichoracearum DC., powdery mildew. Conn., Del., N. Mex., Čalif.

Heterodera radicicota (Greef) Muell., root-knot. La., Tex.

Macrosporium cucumerinum Ell. and Ev., leaf-blight. W. Va., Minn.

Phyllosticta orbicularis Ell. and Ev., leaf-spot. N. Y., Del.

Pseudoperonospora cubensis (Berk. and Curt.) Rostew., downy mildew. Conn., N. J., Va., Ohio. Septoria cucurbitacearum Sacc., leaf-spot.

CUPRESSUS.

C. arizonica, Arizona cypress.

Gymnosporangium cupressi Long and L. N. Goodding, rust. Ariz.

C. glabra, smooth cypress.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-

Phoma sp., nursery blight. Pa., Ill., Iowa, Nebr., Kans.

C. revoluta, sago cycas.

Ascochyta cycadina G. Scalia, leaf-spot. Tex.

CYCLAMEN.

Cyclamen sp., cyclamen.

Botrytis cinerea Auct. Pa., Ohio, Calif. Glomerella cingulata (Ston.) Spauld. and Schrenk, anthracnose. Mass., Va. Heterodera radicicola (Greef) Muell., root-knot. W. Va., Ohio, Ind., Nebr. Phoma cyclamenae Hals., leaf-spot. Ohio.
Phyllosticta cyclaminicola Trel., leaf-spot. Ill.
Ramularia cyclaminicola Trel., leaf-spot. Ill., Minn.
Thielavia basicola (Berk. and Br.) Zopf, black root-rot. Conn.

CYDONIA.

C. japonica, flowering quince.

Bacillus amylovorus (Burr.) Trev. (Erwinia amylovora (Burr.) Com. S. A. B.), blight. Mich.

Gymnosporangium blasdaleanum (Diet. and Holw.) Kern, rust. Oreg. G. germinale (Schw.) Kern, rust. Me., Conn., N. J.

58433-26†---4

CYDONIA—Continued.

C. oblonga, common quince.

Bacillus amylovorus (Burr.) Trev. (Erwinia amylovora (Burr.) Com. S. A. B.),

Ğeneral.

Bacterium tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. Com. S. A. B.), crown-gall. N. J., Pa., Ohio, N. C., Tex., and Town.) Wash., Oreg. Corticium stevensii Burt (Hypochnus ochroleucus F. Noack), leaf-blight.

N.C.

Fabraea maculata (Lév.) Atk., leaf-blight. General.

Glomerella cingulata (Ston.) Spauld. and Schrenk, bitter-rot.

Pa., Va., W. Va., Mich., Ind., Kans.

Gymnosporangium blasdaleanum (Diet. and Holw.) Kern, rust.

G. clavariaeforme (Jacq.) DC., rust. Me., N. H., Conn.

G. germinale (Schw.) Kern, rust. General east of Great Plains. Mass., R. I.,

G. nelsoni Arth., rust. Colo.

G. nidus-avis Thax., rust. Conn., N. Y.

Hendersonia cydoniae Cke. and Ell., leaf-spot. Conn.

Neofabraea malicorticis (A. B. Cordley) Jack., anthracnose. Oreg. Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), rootrot. Tex.

Phoma cydoniae Sacc., pale-rot. Ill., Mich.
P. pomi Pass., fruit-spot. N. H., N. J., Pa., Md.
Phyllactinia corylea (Pers.) Karst., powdery mildew.

Physalospora malorum (Pk.) Shear (P. cydoniae Am. Auct.), black-rot. East

of Great Plains. Podosphaera leucotricha (Ell. and Ev.) Salm., powdery mildew. Wash.

Scientinia cinerea (Bon.) Schroet. (Monilia oregonensis Barss and Posey), blossom blight. Wash., Oreg.

S. fructicola (Wint.) Rehm (S. americana (Wormald) Norton and Ezekiel), brown ret. N. V. W. V. Communication.

brown-rot. N. Y., W. Va., Oreg.

CYNARA.

C. scolymus, globe artichoke.

Botrytis cinerea Auct., rot. N. Y., Calif. General with host. Cercospora obscura Heald and Wolf, leaf-spot. Tex.

Cladosporium sp., leaf-blight. S. C. Corticium vagum Berk. and Curt., stem-rot. Miss.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), Tex. root-rot.

Sclerotium rolfsii Sacc., stem-rot. Ga.

DACTYLIS.

D. glomerata, orchard grass.

Claviceps microcephala (Wallr.) Tul., ergot. Ind., Alaska. C. purpurea (Fr.) Tul., ergot. N. Y., Va., W. Va., Minn.

Colletotrichum graminicolum (Ces.) Wils., anthracnose. Pa., Miss., Ohio, Minn.

Erysiphe graminis DC., powdery mildew. N. Y., Pa., Minn., Idaho, Utah. Gibberella saubinetii (Mont.) Sacc., scab. W. Va.

Gibberella saubinetii (Mont.) Sacc., scab.

Helminthosporium sp., leaf-spot. Minn.

Puccinia graminis Pers., stem-rust. General.
Rhynchosporium secalis (Oud.) Davis, scald. Wis.
Scolecotrichum graminis Fckl., leaf-spot. Widespread.
Uromyces dactylidis Otth, leaf-rust. Va., N. C.

Ustilago striaeformis (West.) Niessl, stripe-smut.

DAHLIA.

Dahlia sp., dahlia.

Bacterium solanacearum EFS. (Phytomonas solanaceara (EFS.) Com. S. A. B.), bacterial wilt. N. C.

N. J., Pa., Mich. Botrytis sp., bud-rot.

B. sp., storage root-rot. N. J.

Corticium vagum Berk. and Curt., stem-rot. Md.

Erysiphe cichoracearum DC., powdery mildew. Conn., Md., N. C., W. Va., Ohio, Wash., Calif.

DAHLIA-Continued.

Dahlia sp., dahlia-Continued.

E. polygoni DC., powdery mildew. Del., Ga., Iowa, Mo., Calif.

Fusarium sp., wilt. N. J.

Heterodera radicicola (Greef) Muell., root-knot. Miss., Calif.

Macrosporium sp., leaf-blight. Pa., Mo.

Phoma dahliae Berk., blight. Ohio.

Pythium debaryanum Hesse, damping-off. Conn., Wash.

Sclerotinia sclerotiorum (Lib.) Mass., stem-rot. Calif.

Sclerotium rolfsii Sacc., stem-rot. Sporotrichum sp., root-rot. N. J.

Verticillium alboatrum Reinke and Berth., wilt.

Mosaic or yellows, undet. Conn., Del.

DAUCUS.

D. carota, carrot.

Alternaria radicina F. Meier, Drechs., and E. D. Eddy, black-rot. Mass.,

Bacillus carotovorus L. R. Jones (Erwinia carotovora (Jones) Com. S. A. B.). soft-rot. General, especially east of Rocky Mts.

Botrytis sp., gray-mold rot. Pa., Wash.

Cercospora sp., leaf-blight. Md.

C. apii carotae Pass., leaf-spot. N. Y., Pa., N. J., Md., Ohio, Ind., Mich., Mo., Corticium vagum Berk, and Curt., stem-rot. Mass., N. Y., Mich., Ill., Tex. Wash., Oreg.

Heterodera radicicola (Greef) Muell., root-knot. Occurs in widely scattered States.

Macrosporium carotae Ell. and A. B. Langlois, leaf-blight. Occurs scatteringly in Eastern States.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), rootrot.

Rhizoctonia crocorum (Pers.) DC., violet root-rot. Wash.
Sclerotinia intermedia G. B. Ramsey, root-rot. Ill.
S. sclerotiorum (Lib.) Mass., watery soft-rot. Conn., N. Y., N. J., La., Miss., Ind., Ill.

Sclerotium rolfsii Sacc., stem-rot. S. C.

DELPHINIUM.

Delphinium spp., larkspur.

Bacterium delphinii (EFS.) Bryan, black-spot. Me., N. H., Mass., Conn., N. Y., Pa., Ill., Oreg.

Botrytis sp., gray-mold. Conn.

Cercospora delphinii Thuem., leaf-spot. Colo. Corticium vagum Berk. and Curt., stem-rot. N. Y., Mich.

Erysiphe polygoni DC., powdery mildew. Me., Conn., N. Y., Mich.
Erysiphe polygoni DC., powdery mildew. Me., Conn., N. Y., Pa., Minn.
Fusarium sp., wilt. Fla.
Phyllosticta delphinii F. E. Clements, leaf-spot. Colo.
Puccinia clematidis (DC.) Lagh., rust. Nebr., Colo., Mont., Idaho, Oreg.
Sclerotium delphinii D. S. Welch, crown-rot. N. Y., Pa., N. J., Ind.
S. rolfsii Sacc., stem-rot. N. J., Fla., La., Ind., Ill.
Septoria delphinella Sacc., leaf-spot. Kans.
Lyceystis seresperioides Koorn. Smit. Colif

Urocystis sorosporioides Koern., smut. Calif.

DEUTZIA.

Deutzia sp., deutzia.

Cercospora deutziae Ell. and Ev., leaf-spot. Del. Heterodera radicicola (Greef) Muell., root-knot. Miss. Phyllosticta deutziae Ell. and Ev., leaf-spot. N. J.

DIANTHUS.

D. barbatus, sweet-william.

Corticium vagum Berk. and Curt., stem-rot. Conn., N. Y. Puccinia arenariae (Schum.) Wint., rust. Conn., Mass., N. Y., Pa., Miss. Septoria dianthi Desm., leaf-spot. Ala. Uromyces caryophyllinus (Schrank) Wint., rust. Nebr.

DIANTHUS-Continued.

D. caryophyllus, carnation.

Alternaria dianthi F. L. Stevens and J. G. Hall, leaf-spot. Occurs scatteringly in Eastern States.

Bacterium woodsii EFS., bacterial spot. Okla.

Botrytis sp., bud-blight. Conn., Pa., Ohio, Ill.

Corticium vagum Berk. and Curt., stem-rot. General.

Fusarium sp., wilt. Widespread.

Heterodera radicicola (Greef) Muell., root-knot. Mass., N. C., S. C., Ohio,

Tex., Oreg., Calif.

Heterosporium echinulatum (Berk.) Cke., leaf-spot. Conn., N. Y., Oreg., Calif.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-rot. Tex.

Septoria dianthi Desm., leaf-spot. Mass., Conn., N. Y., Del., S. C., Miss. Sporotrichum anthophilum Pk., bud-rot. N. Y., N. J., Ind., Ill., Nebr. S. poae Pk., bud-rot. Mass., Pa., N. J., Nebr. Uromyces caryophyllinus (Schrank) Wint., rust. General.

Volutella dianthi (Hals.) Atk., anthracnose. Pa.

DIERVILLA.

D. trifida, bush-honeysuckle.

Phyllosticta diervillae Davis, leaf-spot. Wis.
Ramularia diervillae Pk., leaf-spot. N. H., N. Y., Wis.
Septoria diervillae Ell. and Ev., leaf-spot. Mass., Iowa, Minn., Wis.

DIGITALIS.

D. purpurea, foxglove.

Colletotrichum sp., anthracnose. Mass. Phyllosticta digitalis A. Bellynck, leaf-spot. N. Y., Alaska.

DIOSPYROS.

D. kaki, Japanese persimmon.

Cercospora diospyri Thuem., leaf-spot. S. C.

C. fuliginosa Ell. and Kell., leaf-spot. Fla., Tex., Ill. C. kaki Ell. and Ev., leaf-spot. Ga., Ala., La., Tex.

Heterodera radicicola (Greef) Muell., root-knot. Tex.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-rot. Tex.

Phyllosticta biformis Heald and Wolf, leaf-spot. Tex.

Physalospora cydoniae Arn. (?), fruit-rot. Ala.

D. virginiana, common persimmon.

Cercospora atra Ell. and Ev., leaf-spot. Del.

C. diospyri Thuem., leaf-spot. General throughout range of host.
C. flexuosa Tr. and Earle, leaf-spot. Miss.
C. fuliginosa Ell. and Kell., leaf-spot. Ala., Kans., Tex.
C. virginiana Thuem., leaf-spot. Ala.
Gloeosporium diospyri Ell. and Ev., anthracnose. Del., W. Va., Ala., Miss. Macrophoma diospyri Earle, fruit-spot. Ala.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Tex.

Podosphaera oxyacanthae (DC.) D By., powdery mildew. Ind.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-rot. Tex.

ELAEAGNUS.

E. angustifolia, Russian-olive.

Aecidium arctoum Arth., rust. N. Dak. Cercospora elaeagni Heald and Wolf, leaf-spot. Tex.

Septoria argyraea Sacc., leaf-spot. Iowa, N. Dak.

E. argentea, silverberry.

Puccinia coronata Cda., crown-rust. N. Dak., Mont.

ERIOBOTRYA.

E. japonica, loquat.

Bacillus amylovorus (Burr.) Trev. (Erwinia amylovora (Burr.) Com. S. A. B.), blight. Fla., La., Calif.

Fusicladium eriobotryae Cav., scab. Fla., Calif.

ERYTHRINA.

E. crista-galli, coraltree.

Cercospora erythrinae Ell. and Ev., leaf-spot. La.

ESCHSCHOLTZIA.

E. californica, California poppy.

Entyloma eschscholtziae Hark., smut. Calif. Heterodera radicicola (Greef) Muell., root-knot.

EUCALYPTUS.

Eucalyptus spp., eucalyptus.

Bacterium tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall. Calif.

Botrytis sp., gray-mold. Calif.

Diaporthe eucalyptica Hark. Calif.
Fomes applanatus (Pers.) Wallr. (Ganoderma applanatum (Pers.) Pat.), white-streaked rot. Calif.

Hendersonia coryneoidea Cke. and Hark., leaf-spot. Calif.

H. eucalypti Cke. and Hark., leaf-spot. Calif.

Macrophoma molleriana (Thuem.) Berl. Calif.

Pezizella lythri (Desm.) Shear and B. O. Dodge, leaf-spot. Calif.

Phyllosticta eucalypti Ell. and Ev., leaf-spot.

P. extensa Sacc. and Syd., leaf-spot. Calif.

Physalospora latitans Sacc. Calif. P. suberumpens Ell. and Ev. Calif.

Polyporus schweinitzii Fr., red-brown butt-rot. Calif. Septoria ceuthosporoides (Cke.) Sacc., leaf-spot. Calif.

S. mortolensis Penz. and Sacc., leaf-spot. Damping-off (seedlings), undet. Calif.

Powdery mildew (seedlings), undet. Calif.

EUCHLAENA.

E. mexicana, teosinte.

Helminthosporium turcicum Pass., leaf-blight.

Physoderma zeae-maydis Shaw, brown-spot. Fla.. La. Puccinia sorghi Schw., rust. Nebr.

Ustilago zeae (Beckm.) Ung., smut. Conn., Ala., Ill., Iowa, Kans.

EUONYMUS.

Euonymus spp., burningbush, wahoo.

Bacterium tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS and Town.) Com. S. A. B.), crown-gall. Conn.
Cercospora destructiva Rav., leaf-spot. S. C., Miss.
C. evonymi Ell., leaf-spot. Ky., Ill., Nebr., Kans.
Cladosporium fasciculatum Cda. S. C.
Colletotrichum griseum Heald and Wolf, anthracnose. La., Tex.
Exosporium concentricum Heald and Wolf, leaf-spot. Tex.

Glocosporium frigidum Sacc., anthracnose. Miss.

Marssonia thomasiana Sacc., leaf-spot. Mich., Wis., Ill.

Microsphaera alni (Wallr.) Wint., powdery mildew. Ind., Ill., Iowa, Nebr.,

M. euonymi (DC.) Sacc., powdery mildew. N. J., Miss., Ohio, Minn.

Oidium euonymi-japonici (G. Arcangeli) Sacc., powdery mildew. La.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-rot. Tex.

Phyllosticta evonymi Sacc., leaf-spot. Del.

P. pallens Ell. and Ev., leaf-spot. Ala., Tex., Ind. Ramularia euonymi Ell. and Kell., leaf-spot. Mo., Kans.

Septoria euonymi Rabh., leaf-spot. Va.

EUPHORBIA.

E. marginata, snow-on-the-mountain.

Alternaria tenuis Nees, leaf-spot. Kans.

Microsphaera euphorbiae (Pk.) Berk. and Curt., powdery mildew. Ind., Mo., Kans.

Puccinia pammelii (Trel.) Arth., rust. Miss. Valley and Mo. Valley States. Uromyces proeminens (DC.) Pass., rust. Great Plains, Upper Miss. Valley.

FAGOPYRUM.

F. esculentum, buckwheat.

Corticium vagum Berk. and Curt., stem-rot. N. C., Minn., Wash. Phyllosticta polygonorum Sacc., leaf-spot. Ramularia anomala Pk., leaf-spot. Ind.

R. rufo-maculans Pk., leaf-spot. Conn., Mich.

FAGUS.

F. americana, American beech.

Fomes applanatus (Pers.) Wallr. (Ganoderma applanatum (Pers.) Pat.), Fomes applanatus (Pers.) Wallr. (Ganaderma applanatum (Pers.) Pat. white-streaked rot. General throughout range of host.

F. fomentarius (L.) Fr., white sapwood rot. New England, N. Y., Pa. F. igniarius (L.) Fr., white heart-rot. Mass.

Gloeosporium fagi (Desm.) Ell. and Ev., leaf-spot. Conn., N. Y., Pa. Hydnum septentrionale Fr., white sapwood rot. Ind.

Microsphaera alni (Wallr.) Wint., powdery mildew. East of Miss. River. Phyllactinia corylea (Pers.) Karst., powdery mildew. N. Y., Ohio, Ill.

Phyllosticta faginea Pk., leaf-spot. N. Y., Ohio, Ind., Wis.

FESTUCA.

Festuca spp., fescue.

Claviceps purpurea (Fr.) Tul., ergot. Me., N. Y., Pa., Va., Ill., Minn. Colletotrichum graminicolum (Ces.) Wils., anthracnose. Pa., Minn. Corticium vagum Berk. and Curt., stem-rot. General. Helminthosporium dictyoides Drechs., net-blotch. New England, N. Y., Pa., Md., D. C., Va.

Ophiobolus graminis Sacc., take-all. N. Y., Ark.

Pleomeris piperi (Ricker) Syd., rust. Utah, Oreg., Calif.

Puccinia abundans (Pk.) Jack., rust. N. Dak., Colo., Utah, Calif.

P. coronata Cda., crown-rust. Conn., N. Y., Pa., Ky., Ind., Mo., Nebr.,

P. coronata Cda., crown-rust. Conn., N. 1., Fa., Ry., Ind., Mo., Redi., Kans., Colo., Oreg.
P. epiphylla (L.) Wetts., rust. Oreg.
P. graminis Pers., stem-rust. N. Y., Pa., Tenn., Ind., Mich., Minn., Iowa, Colo., Wyo., Wash., Oreg., Calif.
Septoria tenella Cke. and Ell., leaf-spot. N. J., Kans., Colo.
Tilletia fusca Ell. and Ev., covered smut.
Uromyces hordei Tr., rust. Miss., Tex.
Ustilago mulfordiana Ell. and Ev., smut. Western States.

Ustilago mulfordiana (Wast) Niesel stripe-smut. Md. N. Dak.

U. striaeformis (West.) Niessl, stripe-smut. Md., N. Dak.

FICUS.

F. aurea, Florida strangler fig.

Bacterium tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall. Fla. Cerotelium fici (Cast.) Arth., rust. Fla. Colletotrichum elasticae F. Tassi, anthracnose. Fla. Ophiodothella fici E. Bessey, leaf-spot.

F. carica, fig. Aspergillus niger Tiegh., fruit-rot (smut). Calif. Botrytis cinerea Auct., twig-blight, canker. Wash., Calif. Cercospora fici Heald and Wolf, leaf-spot. General in South. Cerotelium fici (Cast.) Arth., rust. General in South.
Colletotrichum elasticae F. Tassi, anthracnose. Miss.
Corticium laetum Karst., limb-blight. Ga., Ala., La., Miss.
Diplodia sycina syconophila Sacc., die-back. Tex.
Fusarium moniliforme Sheld., fruit-rot. Calif. Glomerella cinqulata (Ston.) Spauld. and Schrenk, anthracnose. Gulf States. Heterodera radicicola (Greef) Muell., root-knot. Gulf States, N. Mex., Ariz. Macrophoma fici Alm. and Cam., canker, fruit-rot. Mycosphaerella bolleana Hig., leaf-spot. General in South. Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-rot. Rhizoctonia microsclerotia J. Matz, leaf-blight. Fla., Ala., La., Tex.

Rhizopus nigricans Ehr., rot. Ala., La. Sclerotinia sclerotiorum (Lib.) Mass., die-back.

Tubercularia fici Edg., canker. Ala., La.

FICUS—Continued.

F. elastica. India rubbertree.

Glomerella cinqulata (Ston.) Spauld. and Schrenk, anthracnose. Phyllosticta roberti L. Boyer and Jacz., leaf-spot. Fla.

FILIPENDULA.

Filipendula sp., meadowsweet.

Cylindrosporium sp. Conn.

Septoria ulmariae Oud., leaf-spot. Conn.

Sphaerotheca humuli (DC.) Burr., powdery mildew.

Triphragmium ulmariae (Schum.) Lk., rust.

FORSYTHIA.

Forsythia sp., forsythia, *goldenbell.

Bacterium tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall. Miss.

Heterodera radicicola (Greef) Muell., root-knot. Miss.

Phyllosticta discincola Ell. and Ev., leaf-spot. Md.

P. terminalis Ell. and Mart., leaf-spot.

FRAGARIA.

Fragaria sp., strawberry.

Armillaria mellea (Vahl) Quel., root-rot. Oreg. Botrytis cinerea Auct., gray-mold rot. General. Corticium vagum Berk. and Curt., crown-rot. Wash.

Dendrophoma obscurans (Ell. and Ev.) H. W. Anderson, angular spot. N. J., Md., Va., W. Va., S. C., Ill., Mich., Minn., Mo. Diplocarpon earliana (Ell. and Ev.) Wolf (Marssonia fragariae Sacc.), leaf-

scorch. East of Miss. River; Wis., Mont.

Heterodera radicicola (Greef) Muell., root-knot. Ark., Miss., Wash. Mycosphaerella fragariae (Tul.) Lindau, leaf-spot. General.

Pezizella lythri (Desm.) Shear and B. O. Dodge, tan brown-rot. Me., Md., Va., Fla., La., Ark., Ohio, Wis.

Phyllosticta fragaricola Desm. and Rob., leaf-spot. N. J., Fla.

Phytophthora cactorum (Leb. and Cohn) Schroet., leather rot. Ky., Tenn.,

Ark., Ill., Mo., Miss., La.

Pythium sp., lilac soft-rot. Tenn. Rhabdospora fragaria Atk., leaf-spot.

Ill.

Rhizoctonia sp., hard brown-rot (fruit). Tenn., N. C., Fla. Rhizopus nigricans Ehr., leak. General east of Great Plains.

Sclerotinia sclerotiorum (Lib.) Mass., crown-rot. La., Miss., Tenn., Ark., Mo., Ohio.

Sclerotium rolfsii Sacc., stem-rot. Fla.

Sphaeronemella fragariae F. L. Stevens and A. Peterson, fruit-rot. Fla., La.

Sphaeropsis sp., black-rot. Ill.

Sphaerotheca humuli (DC.) Burr., powdery mildew. General.

Tylenchus dipsaci (Kuehn) Bast., stem nematode. Wash., Oreg. Black-root, undet. Tenn., Fla., Ala., Mich., Wis., Colo.

FRAXINUS.

Fraxinus spp., ash.

Cercospora fraxinea Ell. and Ev., leaf-spot. Kans. C. fraxinites Ell. and Ev., leaf-spot. Fla., La., Tex. C. superflua Ell. and Holw., leaf-spot. Iowa.

C. texensis Ell. and Gall., leaf-spot. Tex. Cercosporella trichophila Davis, leaf-spot.

Cladosporium epiphyllum (Pers.) C. Martius, leaf-spot. N. Y.

Cylindrosporium californicum Earle, leaf-spot. Oreg.

C. fraxini Ell. and Kell., leaf-spot. Md., Mich., Kans., Pacific coast.

C. minor Ell. and Kell., leaf-spot. Kans.

C. viridis Ell. and Kell., leaf-spot. La., Tex., Wash.
Fomes fraxinophilus Pk., white heartwood rot. Widespread.
Gloesporium aridum Ell. and Holw., anthracnose. Conn., Mass., Pa., Ohio, Mich., Wis.

G. decipiens Ell. and Ev., spot. Iowa, Kans., Tex. G. fraxini Hark., anthraenose. N. Y., Mich., Calif. Leptosphaeria fraxini Ell. and Ev. Mo. Marssonia fraxini Ell. and Davis, leaf-spot. Wis.

FRAXINUS-Continued.

Fraxinus spp., ash—Continued.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-Tex.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Tex., Ind., Ariz.

Phyllactinia corylea (Pers.) Karst., powderv mildew. Northeastern States. Phyllosticta fraxinicola (F. Currey) Ell. and Ev., leaf-spot. East of Great Plains

P. viridis Ell. and Kell., leaf-spot. Widespread.

Piggotia fraxini Berk. and Curt., leaf-spot. General.

Puccinia fraxinata (Lk.) Arth., rust. General east of Great Plains. Ramularia fraxinea Davis, leaf-spot. Wis.

Ramularia fraxinea Davis, leaf-spot. Wis.
Septoria besseyi Pk., leaf-spot. Wis., Iowa.
S. fraxini Desm., leaf-spot. Fla., La., Mich., Minn.
S. leucostroma Ell. and Ev., leaf-spot. Mass., Ind.
S. submaculata Wint., leaf-spot. Mo., Tex.

GAILLARDIA.

G. aristata, gaillardia.

Bullaria gaillardiae (Diet. and Holw.) Arth. and E. B. Mains (Uredo gaillardiae Diet. and Holw.), rust. Calif.

Erysiphe cichoracearum DC., powdery mildew. Mont.

G. pulchella, rose ring gaillardia.

Entyloma polysporum (Pk.) Farl., smut. Nebr., Kans. Septoria gaillardiae Ell. and Ev., leaf-spot. Kans.

GARDENIA.

G. florida, Cape-jasmine.

Heterodera radicicola (Greef) Muell., root-knot. Tex., Calif. (greenhouse).

GARRYA.

G. elliptica, silktassel-bush.

Cercospora garryae Hark., leaf-spot. Calif.

d. glomerata Hark., leaf-spot. Calif.

Phyllosticta garryae Cke. and Hark., leaf-spot. Calif.

GAULTHERIA.

G. shallon, salal.

Phyllosticta gaultheriae Ell. and Ev., leaf-spot. Pacific coast.

GAYLUSSACIA.

Gaylussacia sp., huckleberry.

Exobasidium vaccinii (Fckl.) Wor., hypertrophy. Atlantic Coast States; Mich., Wis.

Guignardia vaccinii Shear, scald. Md.

Microsphaera alni vaccinii (Schw.) Salm., powdery mildew. Mass., N. J., Md., Ill., Wis.

Pucciniastrum myrtilli (Schum.) Arth., rust. Mass., Conn., N. Y., Pa.,

Rhytisma vaccinii Fr., tar-spot. Mass.

Synchytrium vaccinii F. Thomas, red-gall. N. J.

GELSEMIUM.

G. sempervirens, Carolina-jessamine.

Phullosticta gelsemii Ell. and Ev., leaf-spot. N. J.

GLADIOLUS.

Gladiolus sp., gladiolus.

Bacterium gummisudans McC., bacterial blight. Mich., Minn., N. Dak. B. marginatum McC. (Phytomonas marginata (McC.) Com. S. A. B.), stemrot, scab. Widely distributed rot, scab. Widely distributed.

Corticium vagum Berk. and Curt., root-rot. N. Dak. Didymellina iridis (Desm.) Hoehn., leaf-spot. Fusarium sp., rot. Widely distributed.

Phyllosticta gladioli Ell. and Ev., leaf-spot. Ala.

Sclerotium sp., dry-rot. Widespread.
Septoria gladioli Pass., hard-rot, leaf-spot. General wherever host is grown.

GLEDITSIA.

G. triacanthos, honevlocust.

Cercospora condensata Ell. and Kell., leaf-spot. Ill., Kans. C. olivacea (Berk. and Rav.) Ell., leaf-spot. Ala., Miss., Ill., Iowa. Cladosporium gleditschiae Cke. S. C.

Fomes applanatus (Pers.) Wallr. (Ganoderma applanatum (Pers.) Pat.), white-streaked rot. N. Y.

Melasmia hypophylla (Berk. and Rav.) Sacc., leaf-spot. Widespread east of Great Plains.

Microsphaera alni (Wallr.) Wint., powdery mildew. General east of Great Plains.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Ind., Tex. Polyporus sulphureus (Bull.) Fr., brown-checked wood-rot.

Ravenelia opaca Diet., rust. Ill.

G. lasianthus, loblolly-bay.

Phyllosticta gordoniae Ell. and Mart., leaf-spot. Fla.

GOSSYPIUM.

G. hirsutum, Upland cotton, G. barbadense, Sea Island cotton.

Alternaria sp., leaf-spot. S. C.

Ascochyta gossypti Syd., blight. Va., N. C., S. C., Ark.
Bacierium malvacearum EFS. (Phytomonas malvaceara (EFS.) Com. S. A. B.), angular leaf-spot. General in Cotton Belt States; Ariz.

Cercospora althaeina Sacc., leaf-spot. Ill.

Cerotelium gossypii (Lagh.) Arth. (Uredo gossypii Lagh.), rust. Fla.

Corticium vagum Berk. and Curt., stem-rot, sore-shin. Cotton Belt States; Ariz.

Diplodia gossypina Cke., boll-rot. General in Cotton Belt States.

Fusarium spp., boll-rot. General in Cotton Belt States during wet seasons.

F. vasinfectum Atk., wilt. General in sandy soils of Cotton Belt States.

Glomerella gossypii (E. A. Southworth) Edg., anthracnose. Cotton Belt States.

Heterodera radicicola (Greef) Muell., root-knot. General in sandy soils in Cotton Belt States.

Macrosporium nigricantium Atk., black leaf-spot. Cotton Belt States; Ariz. Mycosphaerella gossypina (Cke.) Earle, leaf-spot. General in Cotton Belt States.

Olpitrichum carpophilum Atk., boll-rot. N. C., S. C., Ala., La.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), rootrot. Tex., Okla., N. Mex., Ariz., Calif. Phlyctaena gossypii Sacc., leaf-spot. S. C., Ala.

Phyllosticta gossypina Ell. and Mart., leaf-spot. N. C., S. C., Ala., Miss., Ĭll.

Puccinia hibisciata (Schw.) Kell. (Aecidium gossypii Ell. and Ev.), rust. Tex., Ariz., Calif.

Pythium debaryanum Hesse, damping-off. Ala.

Ramularia areola Atk., frosty mildew. Cotton Belt States; Fla.

Septoria gossypina Cke., leaf-spot. S. C., Miss.
Thielavia basicola (Berk. and Br.) Zopf, black root-rot.
Tylenchus penetrans Cobb, nematode. N. C., Ga.

Verticillium alboatrum Reinke and Berth., wilt. Va. Malnutrition, "rust," nonpar. Poorer soils, Cotton Belt States.

GYMNOCLADUS.

G. dioicus, Kentucky coffeetree.

Cercospora gymnocladi Ell. and Kell., leaf-spot. Ill., Nebr., Kans., Mo. Marssonia sp., leaf-spot. Nebr.

HAMAMELIS.

H. virginiana, witch-hazel.

Cercospora hamamelidis Ell. and Ev., leaf-spot. Fla. Gonatobotryum maculicolum (Wint.) Sacc., leaf-spot. N. Y. Phyllactinia corylea (Pers.) Karst., powdery mildew.

HAMAMELIS—Continued.

H. virginiana, witch-hazel—Continued.

Phyllosticta hamamelidis Cke., leaf-spot. General east of Miss. River. Podosphaera biuncinata Cke. and Pk., powdery mildew. General east of Miss. River.

Ramularia hamamelidis Pk., leaf-spot. N. Y., W. Va., Mich., Ill., Wis.

HEDERA.

H. helix, English ivy.

Glomerella cingulata (Ston.) Spauld. and Schrenk, anthracnose. Conn., Md.,

Phyllosticta concentrica Sacc., leaf-spot. N. Y., N. J., S. C., Ala., Tex. P. hederaecola Dur. and Mont., leaf-spot. N. Y., N. J. Ramularia hedericola Heald and Wolf, leaf-spot. Tex.

Vermicularia trichella Fr., leaf-spot. Mass., S. C., Md., Ohio.

HELIANTHUS.

H. annuus, sunflower.

Armillaria mellea (Vahl) Quel., root-rot.

Botrytis sp., stem-rot. Oreg., Calif. Cercospora pachypus Ell. and Kell., leaf-spot. Kans., Tex.

Entyloma polysporum (Pk.) Farl., smut. Mont. Erysiphe cichoracearum DC., powdery mildew. General. Fusarium sp., damping-off. N. J. Heterodera radicicola (Greef) Muell., root-knot. W. Va.,

W. Va., Ala.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-Tex. rot.

Plasmopara halstedii (Farl.) Berl. and DeToni, downy mildew. Ohio, W, Va., Ind., Iowa, Minn., N. Dak., Kans.

Puccinia helianthi-mollis (Schw.) Jack., rust. General.

N. Dak., Mont., Idaho, Wash., Oreg.
Septoria helianthi Ell. and Kell., leaf-spot. Widespread.

H. tuberosus, Jerusalem-artichoke.

Cercospora helianthi Ell. and Ev., leaf-spot. Kans.

Coleosporium helianthi (Schw.) Arth., rust. Va., S. C., Ala., Ill.

Erysiphe cichoracearum DC., powdery mildew. Northeastern and North-Central States.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-Tex.

Plasmopara halstedii (Farl.) Berl. and DeToni, downy mildew. Vt., Del., Wis., Iowa, Kans.

Puccinia helianthi-mollis (Schw.) Jack., rust. East of Great Plains.

Sclerotinia sp., wilt. Wash.

Sclerotium rolfsii Sacc., stem-rot. S. C., La.

HELLEBORUS.

H. niger, Christmas-rose.

Coniothyrium hellebori Cke. and Mass. N. Y., Oreg.

HEMEROCALLIS.

H. fulva, daylily.

Cercospora hemerocallis L. R. Tehon, leaf-spot. Didymellina iridis (Desm.) Hoehn., leaf-spot.

HIBISCUS.

H. esculentus, okra, gumbo.

Ascochyta abelmoschi Harter, pod-spot. N. Y., Md., S. C.

N. Y. Botrytis sp., rot.

Cercospora althaeina Sacc., leaf-spot. La.

C. brachypoda Speg., leaf-spot. La. C. hibisci Tr. and Earle, leaf-spot. Fla., Ala., La., Miss. Corticium vagum Berk. and Curt., stem-rot. Ala., Tex.

Erysiphe cichoracearum DC., powdery mildew. Conn.
Fusarium vasinfectum Atk., wilt. Southern States; Conn., Pa., Ariz.
Heterodera radicicola (Greef) Muell., root-knot. Southern States.
Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-rot. Tex., Ariz.

HIBISCUS-Continued.

H. esculentus, okra, gumbo—Continued.

Phullosticta hibiscina Ell. and Ev., leaf-spot. Ill.

Verticillium alboatrum Reinke and Berth., wilt, N. J., S. C., Ala., Oreg.,

H. syriacus, *rose-of-Sharon.

Heterodera radicicola (Greef) Muell., root-knot. Tex. Kuehneola malvicola (Speg.) Arth., rust. La., Miss.

Nectria sp., canker. Ohio.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-Tex.

Phyllosticta suri aca Sacc., leaf-spot. N. Y.

HICORIA.

Hicoria spp., hickory.

Armillaria mellea (Vahl) Quel., root-rot. Ind.

Bacterium tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall. Md., Kans.

Fomes applanatus (Pers.) Wallr. (Ganoderma applanatum (Pers.) Pat.),

white-streaked rot. Conn.
Fusicladium effusum Wint., scab. Ill., Kans.

Gnomonia caryae Wolf, anthracnose. East of Miss. River: Mo.

Hendersonia davisii Ell. and Ev., leaf-spot. Wis.

Marssonia juglandis (Lib.) Sacc., leaf-spot. N. J., W. Va., Iowa.

Microsphaera alni (Wallr.) Wint., powdery mildew. Ala., Miss., Ind., Ill., Mo.

Microstroma juglandis (Bereng.) Sacc., witches'-broom. General east of Great Plains. Mycosphaerella convexula (Schw.) F. V. Rand, leaf-spot. S. C., Ga., Fla.,

Ala., Ohio.

Ala., Ohio.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Tex., Ind.

Nutt., powdery mildew. Wis.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Phyllosticta caryae Pk., leaf-spot. Northeastern and North-Central States; Gulf States.

P. convexula Bub., leaf-spot. M. P. subtilis Pk., leaf-spot. N. Y.

Rosellinia caryae L. Bonar, canker.

Septoria caryae Ell. and Ev., leaf-spot. S. hicoriae Tharp, leaf-spot. Tex.

Strumella coryneoidea Sacc. and Wint., canker. Pa.

H. pecan, pecan.

Bacterium tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall. S. C., Gulf States, Calif. Botryosphaeria berengeriana DeNot., die-back. S. C., Ala., Fla. Cercospora fusca (Heald and Wolf) emend. F. V. Rand, brown leaf-spot.

S. C., Gulf States, N. Mex.

Fusicladium effusum Wint., scab. N. C. to Okla. and Tex.

Glomerella cingulata (Ston.) Spauld. and Schrenk, anthracnose. S. C., Gulf

States.

Heterodera radicicola (Greef) Muell., root-knot.

Microsphaera alni (Wallr.) Wint., powdery mildew. S. C., Gulf States.

Microstroma juglandis (Bereng.) Sacc., leaf-spot. Ga., Ala., Tex.

M. juglandis robustum Hig., flower-blight. Ga.

Mycosphaerella convexula (Schw.) F. V. Rand, leaf-blotch. S. C., Ga., Ala., Fla., Ohio.

Oidium sp., powdery mildew. Tex.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-Tex. rot.

Pestalozzia sp., leaf-spot. Fla. Phoma sp., twig-blight. Fla.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Tex.

Phyllosticta caryae Pk., leaf-spot. Va., S. C., Gulf States.

Septoria caryae Ell. and Ev., leaf-spot. Tex.

Kernel-spot, southern stinkbug (Nezara viridula L.). N. C., S. C., Ga., Fla., Ala., Miss., La., Tex.

Rosette, undet. Del., Va., N. C., S. C., Gulf States; Ark., Calif.

HOLCUS.

H. halepensis, Johnson grass.

Cercospora sorghi Ell. and Ev., leaf-spot. Ala., La., Tex., Nebr. Colletotrichum lineola Cda., anthracnose. Ala., La., Tex. Helminthosporium turcicum Pass., leaf-blight. Ala., Tex.

Phyllosticta sorghina Sacc., leaf-spot. Tex.

Puccinia purpurea Cke., rust. S. C., Fla., Ala., La., Okla., Tex., Calif.

Septoria pertusa Heald and Wolf, leaf-spot. Tex.

Sphacelotheca sorghi (Lk.) Clint., smut. Utah, Wash.

H. sorghum, sorghum.

Bacterium andropogoni EFS., stripe. General.

Cercospora sorghi Ell. and Ev., leaf-spot. Ga., Ala., La., Miss. Colletotrichum lineola Cda., anthracnose. Conn., W. Va., N. C., Ga., Fla., Ala., La., Tex., Minn.

Helminthosporium turcicum Pass., leaf-blight. Kans., Tex. Puccinia purpurea Cke., rust. Tex., Okla., La., Fla., Calif.

Sclerotium rolfsii Sacc., stem-rot. La. Sorosporium reilianum (Kuehn) McAlp., head-smut. General.

Sphacelotheca cruenta (Kuehn) Potter, loose kernel smut. Ala., Tex., Ark., N. Mex.

S. sorghi (Lk.) Clint., covered kernel smut. General.

*H. sorghum saccharatus, sorgo, sugar sorghum.

Bacterium andropogoni EFS., stripe.

Colletotrichum lineola Cda., anthracnose. N. J., Va.

Phoma insidiosa F. Tassi, leaf-spot. Tex., Miss., Ark., Kans.

Puccinia purpurea Cke., rust. Tex.

Sphacelotheca sorghi (Lk.) Clint., covered kernel smut. Colo.

H. sorghum sudanensis, Sudan grass.

Colletotrichum graminicolum (Ces.) Wils., anthracnose. N. C., Ala., Tex., N. Dak.

C. lineola Cda., anthracnose. Ala.

Helminthosporium turcicum Pass., leaf-blight. Tex. Phoma insidiosa F. Tassi, leaf-spot. Va.

Sorosporium reilianum (Kuehn) McAlp., head-smut. Wash. Sphacelotheca sorghi (Lk.) Clint., covered kernel smut. N. C., Nebr., Kans.

*H. sorghum technicus, broomcorn.

Bacterium andropogoni EFS., stripe. Colletotrichum lineola Cda., anthracnose. Occurs in widely scattered States.

Sorosporium reilianum (Kuehn) McAlp., head-smut. Ohio. Sphacelotheca cruenta (Kuehn) Potter, loose kernel smut. Tex.

S. sorghi (Lk.) Clint., covered kernel smut. Ohio.

HOLODISCUS.

H. discolor, *oceanspray.

Cylindrosporium filipendulae Thuem., leaf-spot. Wash. Phyllactinia corylea (Pers.) Karst., powdery mildew. Wash. Podosphaera ozyacanthae (DC.) D By., powdery mildew. Idaho.

HORDEUM.

H. vulgare, barley.

Bacterium translucens L. R. Jones, A. G. Johnson, and C. S. Reddy, bacterial blight. S. C., Tex., Ark., Ind., Wis., Minn., Iowa, N. Dak., S. Dak., Mont., Colo., Idaho, Oreg.

Claviceps purpurea (Fr.) Tul., ergot. Infrequent but widely distributed. Colletotrichum graminicolum (Ces.) Wils., anthracnose. General east of

Great Plains.

Erysiphe graminis DC., powdery mildew. General.

Fusarium culmorum leteius Sherb., seedling blight. Oreg., Calif. Gibberella saubinetii (Mont.) Sacc., scab. General east of Great Plains. Helminthosporium californicum W. W. Mackie and G. E. Paxton, rusty. blotch. Calif.

H. gramineum Rabh., stripe. General.
H. sativum Pam., King, and Bak., spot-blotch. General.
Marasmius tritici P. A. Young. Ill.
Ophiobolus graminis Sacc., take-all, foot-rot. Calif.

HORDEUM-Continued.

H. vulgare, barley-Continued.

Puccinia anomala Rostr., leaf-rust. General.

P. glumarum (Schm.) Eriks. and Henn., stripe-rust. West of Great Plains. P. graminis Pers., stem-rust. General.

Pyrenophora teres (Died.) Drechs., net-blotch. General.

Rhizoctonia sp., foot-rot. Wash.

Rhynchosporium secalis (Oud.) Davis, scald. Upper Miss. Valley; Pacific Northwest; Calif.

Septoria passerinii Sacc., leaf-spot. Mich., Minn., Iowa, N. Dak., S. Dak., Idaho, Oreg.

Ustilago hordei (Pers.) Kell. and Sw., covered smut. General.

U. nuda (Jens.) Kell. and Sw., loose smut. General.

HUMULUS.

H. lupulus, hop.

Armillaria mellea (Vahl) Quel., root-rot. Oreg.

Colletotrichum sp., anthracnose. N. Y.

Cylindrosporium humuli Ell. and Ev., leaf-spot. N. Y., N. J., Del., Mich., Wis., Iowa.

Erysiphe cichoracearum DC., powdery mildew. Utah. Phyllosticta decidua Ell. and Kell., leaf-spot. Wis.

P. humuli Sacc. and Speg., leaf-spot. Mass., Iowa. Plasmopara humuli Miyabe and Tak., downy mildew. Septoria lupulina Ell. and Kell., leaf-spot. Kans. Wis.

Sphaerotheca humuli (DC.) Burr., powdery mildew. Me., N. Y., Ala., Wyo., Pacific coast.

HYACINTHUS.

H. orientalis, common hyacinth.

Bacterium hyacinthi J. H. Wakker (Phytomonas hyacinthi (Wakker) Com. S. A. B.), yellow disease. Mass.

Fusarium sp., bulb-rot (dry). Mo., Wash. F. bulbigenum Cke. and Mass., bulb-rot. R. I.

Tylenchus dipsaci (Kuehn) Bast., stem and bulb nematode. Wash. Mosaic, gray disease, undet. Wash.

HYDRANGEA.

Hydrangea sp., hydrangea.

Ascochyta sp., leaf-spot. Pa.

Botrytis cinerea Auct., blight. Wash.
Cercospora hydrangeana Tharp, leaf-spot. Ala., Tex.
Heterodera radicicola (Greef) Muell., root-knot. Miss.
Phyllosticta hydrangeae Ell. and Ev., leaf-spot. N. J., Ala., Ind.
Pucciniastrum hydrangeae (Berk. and Curt.) Arth., rust. Frequent east of

Miss. River. Septoria hydrangeae Bizz., leaf-spot. Miss.

HYDRASTIS.

H. canadensis, goldenseal.

Botrytis sp., stem-rot. Conn., N. Y., Ind., Mich., Wis., Wash. Fusarium sp., wilt. N. Y., Ohio, Ill.

Heterodera radicicola (Greef) Muell., root-knot.

ILEX.

Ilex spp., holly, winterberry.

Cercospora ilicis Ell., leaf-spot. N. J., Ala., Miss. Microsphaera alni (Wallr.) Wint., powdery mildew. Ala., Ill., Wis.

Phyllosticta concomitans Ell. and Ev., leaf-spot. La. P. haynaldi Roum. and Sacc., leaf-spot. W. Va.

P. ilicicola (Cke. and Ell.) Ell. and Ev., leaf-spot. N. Y.

P. opaca Ell. and Ev., leaf-spot. W. Va. P. terminalis Ell. and Mart., leaf-spot. Fla.

Ramularia alaterni Thuem., leaf-spot. Mich. R. prinos Pk., leaf-spot. N. Y., Wis. Rhytisma concavum Ell. and Kell., tar-spot. Ohio.

R. ilicicolum Schw., tar-spot. Va., Miss.

ILEX-Continued.

Ilex spp., holly, winterberry—Continued.

R. ilicis-canadensis Schw., tar-spot. Me., Mich., Ind.

R. velatum (Schw.) Fr., tar-spot. Miss.

Septoria ilicifolia Cke. and Ell., leaf-spot.

I. opaca, American holly.

Cercospora ilicicola Maub., leaf-spot.

C. pulvinula Cke. and Ell., leaf-spot. N. J., Tex.

Diplodia sp., foot-rot. Fla.

Melampsoropsis ilicinum (Ell. and Ev.) Jack., rust.

Phyllactinia corylea (Pers.) Karst., powdery mildew.

Phyllosticta ilicicola (Cke. and Ell.) Ell. and Ev., leaf-spot. N. Y., N. J. P. opaca Ell. and Ev., leaf-spot. W. Va., S. C. P. terminalis Ell. and Mart., leaf-spot. Miss. Rhytisma curtisii Berk. and Rav., tar-spot. Md., S. C., Ala., Tex.

R. ilicis-canadensis Schw., tar-spot. W. Va.

IPOMOEA.

I. batatas, sweetpotato.

Albugo ipomoeae-panduranae (Schw.) Sw., white-rust. General where sweetpotatoes are grown.

Botrytis cinerea Auct., gray-mold rot. N. J.

Coleosporium ipomoeae (Schw.) Burr., rust. Miss.

Corticium vagum Berk. and Curt., stem-rot. Frequent in sweetpotato States. Cystospora batata (Ell. and Hals.) J. A. Elliott, soil rot, pox. Middle Atlantic and Gulf States, Ohio, Kans., Ark., Okla.

Diaporthe batatatis (Ell. and Hals.) Harter and E. Field, dry-rot.

Kans, and Tex.

Diplodia tubericola (Ell. and Ev.) Taub., Java black-rot. General, Del. to Kans., Ga., Tex.

Fusarium batatatis Woll. and F. hyperoxysporum Woll., stem-rot. General in sweetpotato States.

F. oxysporum Schl., surface rot. N. J., Ala., Miss.

Heterodera radicicola (Greef) Muell., root-knot. Southern States, Calif.

Monilochaetes infuscans Ell. and Hals., scurf. General. Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), rootrot. Tex.

Phyllosticta batatas (Thuem.) Cke., leaf-spot. N. J. and Ohio to Kans. and Tex.

Plenodomus destruens Harter, foot-rot. N. J. to Iowa and southward, Calif.

Pythium sp., rootlet rot. N. Y., Del., Md., Va. and in States south and

Rhizopus nigricans Ehr., soft-rot, ring-rot. General as a storage rot.

Sclerotinia sp., damping-off. N. J.

Sclerotium bataticola Taub., charcoal rot. Frequent throughout country as a storage rot.

S. rolfsii Sacc., stem-rot. S. C. to Tex.
Septoria bataticola Taub., leaf-spot. Iowa to Tex. and eastward.
Sphaeronema fimbriatum (Ell. and Hals.) Sacc., black-rot. General in all sweetpotato States.

Trichoderma koningi Oud., storage rot. N. J., Del. Mosaic, undet. Fla., Miss., Ark., Tex., Kans. Mottle-necrosis (associated with Pythium sp.). N. J., D. C.

I. purpurea, morning-glory.

Albugo ipomoeae-panduranae (Schw.) Sw., white-rust. Del., Va., W. Va., Ga., Ala., Miss., Kans.

Cercospora alabamensis Atk., leaf-spot. Ala.

C. ipomoeae Wint., leaf-spot. Ala.

C. viridula Ell. and Ev., leaf-spot. N. J., N. C., Nebr. Coleosporium ipomoeae (Schw.) Burr., rust. Miss. Valley States, Ala., Tex. Heterodera radiciola (Greef) Muell., root-knot.

Puccinia crassipes Berk. and Curt., rust. Okla.

IRIS.

Iris sp., iris.

Bacillus carotovorus L. R. Jones (Erwinia carotovora (Jones) Com. S. A. B.), soft-rot. Conn., N. Y., N. J., Ohio, Ind., Mich., Minn. Cylindrosporium iridis Ell. and Hals., leaf-spot. Ind., Iowa.

Didymellina iridis (Desm.) Hoehn., leaf-spot. Widespread in northern twothirds of United States.

Macrosporium iridicolum Ell. and Ev., leaf-spot. Idaho.
M. iridis Cke. and Ell., leaf-spot. Ala., Ohio, Mont.
Pseudomonas iridis Van Hall, rhizome rot. S. Dak.
Puccinia iridis (DC.) Rabh., rust. Conn., N. Y., Mich., Colo., Pacific

Sclerotinia sclerotiorum (Lib.) Mass., stem-rot. Wash. Sclerotium rolfsii Sacc., crown-rot. Md., Ind., Miss., Calif. Scolecotrichum iridis Fautr. and Roum., leaf-spot. Miss., Minn.

S. punctulatum Tr. and Earle, leaf-spot.

Septoria sp., leaf-spot. N. Dak.

I. versicolor, blueflag iris.

Cylindrosporium iridis Ell. and Hals., leaf-spot. Ind.
Didymellina iridis (Desm.) Hoehn., leaf-spot. Ind.
Phyllosticta iridis Ell. and Mart., leaf-spot. N. Y., Fla., Ohio, Mich.
Puccinia iridis (DC.) Rabh., rust. Northeastern States.
P. majanthae (Schum.) Arth. and Holw., rust. Mass., N. Y., Ind., Mich.,
Wis., Minn., Iowa, Nebr.

JUGLANS.

J. cinerea, butternut.

Cercospora juglandis Kell. and Sw., leaf-spot.

Fomes igniarius (L.) Fr., white heart-rot. Vt., N. J. Gnomonia leptostyla (Fr.) Ces. and DeNot., anthracnose. General throughout range of host.

Melanconis juglandis (Ell. and Ev.) A. H. Graves, canker. East of Miss. River: Wis., Iowa.

Microsphaera alni (Wallr.) Wint., powdery mildew. Ill.

Microstroma juglandis (Bereng.) Sacc., leaf-spot. General over range of host. Phyllactinia corylea (Pers.) Karst., powdery mildew. Ind. Polyporus sulphureus (Bull.) Fr., brown-checked wood-rot.

J. hindsii. Hinds walnut.

Cylindrosporium juglandis Wolf, leaf-spot. Calif. Microstroma juglandis (Bereng.) Sacc., leaf-spot. Calif.

J. nigra, black walnut.

Armillaria mellea (Vahl) Quel., root-rot. Oreg. Bacterium tumefaciens ÉFS. and Town. (Phytomonas tumefaciens (EFS. and Com. S. A. B.), crown-gall. Kans., Calif.

Cercospora juglandis Kell. and Sw., leaf-spot. Fomes everhartii (Ell. and Gall.) Schrenk, heart-rot.

F. igniarius (L.) Fr., white heart-rot. Ohio. Gnomonia leptostyla (Fr.) Ces. and DeNot., anthracnose. General through-

out range of host.

Melanconis juglandis (Ell. and Ev.) A. H. Graves, canker. N. Y. Microsphaera alni (Wallr.) Wint., powdery mildew. Ind., Ill., Kans., Miss. Microstroma juglandis (Bereng.) Sacc., leaf-spot. Del., Md., N. C., Ohio, Ill., Mo., Kans.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-

rot. Tex.

Phorodendron flavescens (Pursh) Nutt., mistletoe. Ind. Phleospora multimaculans Heald and Wolf, leaf-spot. Tex. Polyporus sulphureus (Bull.) Fr., brown-checked wood-rot. Septoria juglandis Berk. and Curt., leaf-spot. Pa., N. C.

J. regia, Persian walnut (English walnut).

Armillaria mellea (Vahl) Quel., root-rot. Oreg., Calif. Bacterium juglandis (N. B. Pierce) EFS., bacterial blight. N. Y., Del., Va., Pacific coast.

B. tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall. Pacific coast.

JUGLANS-Continued.

J. regia, Persian walnut (English walnut)—Continued.

Cylindrosporium sp., leaf-spot. Ala. C. inalandis Wolf, leaf-spot. N. C. C. juglandis Wolf, leaf-spot.

Dothiorella gregaria Sacc., melaxuma. Calif.

Glomerella cingulata (Ston.) Spauld. and Schrenk, anthracnose. Md. Melanconis juglandis (Ell. and Ev.) A. H. Graves, canker. Conn., N. J. Microstroma juglandis (Bereng.) Sacc., leaf-spot. Conn., Calif.

Sphaeropsis sp., canker. Conn.

J. sieboldiana, Japanese walnut.

Bacterium tumefaciens EFS, and Town. (Phytomonas tumefaciens (EFS, and Town.) Com. S. A. B.), crown-gall. Pa. Melanconis juglandis (Ell. and Ev.) A. H. Graves, canker. Conn., N. Y.,

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), rootrot. Tex.

JUNIPERUS.

Juniperus spp., juniper, redcedar.

Cercospora sequoiae juniperi Ell. and Ev., leaf-spot. Wis. Cyanospora albicedrae Heald and Wolf, whitening. Tex. (J. montana). Fomes earlei (Murr.) Sacc. and D. Sacc., yellow pocket rot. Tex., Colo., N. Mex., Ariz.

F. juniperinus Schrenk, white pocket rot. Central States.
F. roseus (Alb. and Schw.) Fr., brown pocket rot. Fla., Ala.
F. texanus (Murr.) Hedge. and Long, brown fibrous rot. Tex., N. Mex., Ariz.

Gymnosporangium bermudianum (Farl.) Earle, rust. Ala., Miss. G. betheli Kern, rust. N. Dak., Mont., Colo., N. Mex.

G. clavariaeforme (Jacq.) DC., rust. East of Great Plains.
G. corniculans Kern, rust. Mich., Wis.
G. cornutum (Pers.) Arth., rust. Mich., Colo.

G. davisii Kern, rust. Me., Wis. G. exiguum Kern, cedar rust. Tex.

G. germinale (Schw.) Kern., rust. Eastern States.

G. globosum Farl., rust. Eastern States.

G. gracilens (Pk.) Kern and Bethel, rust. Colo., Utah, N. Mex., Ariz., Nev.

G. harknessianum (Ell. and Ev.) Kern, rust. Oreg.

G. inconspicuum Kern, rust. Colo., Utah.
G. japonicum Syd., rust. Conn., Mass., Oreg.
G. juniperinum (L.) C. Martius, rust. Iowa, Colo., Utah, Wash.
G. juniperi-virginianae Schw., rust. East of Great Plains.
G. juvenescens Kern, rust. Mont., Colo., Utah, N. Mex., Idaho.
G. kernianum Bethel, rust. Colo., N. Mex., Utah. Idaho.
G. multiperum Korn, rust.

G. multiporum Kern, rust. Colo.

G. nelsoni Arth., rust. Northern Rocky Mt. States.

G. nidus-avis Thax., rust. Mass., N. Y., Nebr. G. trachysorum Kern, rust. Fla.

G. tubulatum Kern, rust. Mont.

Herpotrichia nigra Hartig, matting. Colo. (J. sibirica and J. communis).

Lophodermium juniperinum (Fr.) DeNot., leaf-cast. Iowa, Colo.

Phomopsis juniperovora G. Hahn, nursery blight. Pa., Ohio, Ill., Mo., Iowa, Nebr., Kans.

Phoradendron juniperinum Engelm., mistletoe. Southwestern and Western States.

J. virginiana, redcedar.

Cercospora sequoiae juniperi Ell. and Ev., leaf-spot. Wis.

Fomes annosus Fr., white spongy rot. Del.

F. juniperinus Schrenk, white pocket rot. Md.

F. roseus (Alb. and Schw.) Fr., brown pocket rot. General. Gymnosporangium bermudianum (Farl.) Earle, rust. Fla., La., Miss.

G. corniculans Kern, rust. N. Y.
G. effusum Kern, rust. N. Y., N. J., S. C., Va.
G. exiguum Kern, rust. Tex.

G. exterum Arth. and Kern, rust. Ky. G. floriforme Thax., rust. Gulf States.

JUNIPERUS-Continued.

J. virginiana, redcedar—Continued.

G. germinale (Schw.) Kern, rust. General east of Great Plains.
G. globosum Farl., rust. General east of Great Plains.
G. juniperi-virginianae Schw., rust. General east of Great Plains.
G. juvenescens Kern, rust. Wis., Nebr.
G. nidus-avis Thax., rust. General east of Miss. River.

G. trachysorum Kern, rust. S. C., Fla., Miss.

Phomopsis juniperovora G. Hahn, nursery blight. N. Y. to Kans.

Poria purpurea Fr., brown laminated rot. Iowa.

KALMIA.

K. latifolia, mountain-laurel.

Cercospora kalmiae Ell. and Ev., leaf-spot. Conn., Pa., W. Va. C. sparsa Cke., leaf-spot. S. C., Miss.

Mycosphaerella colorata (Pk.) Earle, leaf-spot. N. Y., Pa., Ala. Pestalozzia kalmicola Ell. and Ev., leaf-spot. N. J., Del.

D. C. Phomopsis kalmiae Enlows, leaf-blight.

Phyllosticta kalmicola (Schw.) Ell. and Ev., leaf-spot. N. Y., N. J., Pa. Del., Md., Miss.

P. latifolia Ell. and Ev., leaf-spot. N. J., Del., Miss.
Septoria angustifolia Ell. and Ev., leaf-spot. Atlantic Coast States; Ohio.
Venturia kalmiae Pk., leaf-spot. N. Y.

KERRIA.

K. japonica, kerria.

Coccomyces kerriae V. B. Stewart, twig and leaf blight. Conn., Del., Ala., Ky. Cylindrosporium sp., leaf-spot. Md. Septoria sp., leaf-spot. N. J., Md.

LACTUCA.

L. sativa, lettuce.

Alternaria sp., leaf-spot. Ohio, Fla., La., Wash. A planobacter rhizoctonia R. C. Thomas, bacterial rosette.

Bacillus carotovorus L. R. Jones (Erwinia carotovora (Jones) Com. S. A. B.), soft-rot. General.

Bacterium marginale N. A. Brown (Phytomonas marginale (Brown) Com. S. A. B.), leaf-spot. N. J., Kans.

B. viridilividum N. A. Brown (Phytomonas viridilivida (Brown) Com. S. A. B.), lettuce rot. Va., La., Mich.
B. vitians N. A. Brown (Phytomonas vitians (Brown) Com. S. A. B.), bacterial wilt. N. J., Va., S. C., N. Mex.

Botrytis cinerea Auct., gray-mold rot. General.

Bremia lactucae E. Regel, downy mildew. General.

Corticium vagum Berk. and Curt., bottom rot. General. Heterodera radicicola (Greef) Muell., root-knot. Southern States.

Macrosporium cladosporioides Desm., leaf-spot. Fla.

Marssonina panattoniana (Berl.) Magn., anthracnose. N. Y., N. C., Ohio,

Mich., Kans., Utah, Orèg., Wash. Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-Tex., Ariz.

Puccinia hieraciata (Schw.) Jack., rust. Minn., Ind. Pythium debaryanum Hesse, damping-off. Conn., N. Y., Pa., Fla., Ohio,

Sclerotinia minor I. C. Jagger, drop, pink-rot. Mass., N. Y., Pa., Fla. S. sclerotiorum (Lib.) Mass., drop. General.

S. sclerotiorum (Lib.) Mass., drop. Ge S. sclerotiorum (Lib.) Fla. Fla.

Sclerotium rolfsii Sacc., stem-rot. Fla.
Septoria lactucae Pass., leaf-spot. East of Great Plains.
Mosaic, undet. Conn., N. Y., Pa., S. C., Fla., Minn.
Rio Grande disease (rabbit-ear, white-heart), undet. N. Y., Miss., La., Tex., Ill.

Tipburn, nonpar. Widespread.

LAGERSTROEMIA.

L. indica, crapemyrtle.

Cercospora lythracearum Heald and Wolf, leaf-spot. Tex. Phyllosticta lagerstroemiae Ell. and Ev., leaf-spot. La., Tex.

Powdery mildew, undet. S. C., Ga., Ala., La.

LARIX.

L. europaea, European larch.

Melampsora bigelowii Thuem., rust. N. Y., Ind.

M. medusae Thuem., rust. Ind.

L. laricina, American larch, or tamarack.

Fomes officinalis Fr., reddish brown-rot. Wis.

F. pinicola Fr., brown crumbly rot. General with host.

Melampsora bigelowii Thuem., rust. N. Y., Wis.

M. medusae Thuem., rust. N. Y., Mich., Ind.

Melampsoridium betulae (Schum.) Arth., rust. Polyporus schweinitzii Fr., red-brown butt-rot.

Razoumofskya laricis Piper, mistletoe witches'-broom. Idaho.
R. pusilla (Pk.) O. Kuntze, mistletoe. Northern States.
Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot.

L. occidentalis, western larch.

Botrytis sp., seedling twig-blight. Idaho.

Botrytis sp., seedling twig-blight. Idaho.

Mont., Idaho.

F. pinicola Fr., brown crumbly rot. Idaho.
F. roseus (Alb. and Schw.) Fr., brown pocket rot. General with host.
Hypodermella laricis Tub., leaf-cast. Mont., Idaho, Oreg.

Lovhodermium laricinum Duby, leaf-cast. Idaho, Wash.

Melampsora bigelowii Thuem., rust. Idaho.

Polyporus berkeleyi Fr., string and ray rot. P. schweinitzii Fr., red-brown butt-rot. Idaho.

P. sulphureus (Bull.) Fr., brown-checked wood-rot. Idaho.

Razoumofskya laricis Piper, mistletoe witches'-broom. Mont., Pacific Northwest.

Rhizina inflata (Schaeff.) Sacc., seedling blight. Idaho.

Sparassis radicata Weir, yellow root-rot. Mont., Pacific Northwest. Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot. Idaho.

LATHYRUS.

L. odoratus, sweet pea.

Bacillus lathyri Manns and Taub., streak. Mass., N. Y., Pa., Del.

Colletotrichum pisi Pat., anthracnose. S. C., Ga.

Corticium vagum Berk. and Curt., stem-rot. Widespread.

Erysiphe polygoni DC., powdery mildew. General.
Fusarium lathyri Taub., wilt, stem-rot. Conn., Mass., N. Y., Va., Fla., Ind., N. Dak.

F. martii pisi F. R. Jones, root-rot. N. Y.

Glomerella cingulata (Ston.) Spauld. and Schrenk, anthracnose. scatteringly east of Great Plains.

Heterodera radicicola (Greef) Muell., root-knot.

Microsphaera alni (Wallr.) Wint., powdery mildew. General.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-rot. Va.

Phytophthora cactorum (Leb. and Cohn) Schroet., root-rot. Conn.

Pythium debaryanum Hesse, root-rot. Conn.

Sclerotinia sclerotiorum (Lib.) Mass., stem-rot, collar rot. Pa. Sclerotium rolfsii Sacc., stem-rot. Fla.

Sclerotium rolfsii Sacc., stem-rot.

Thielavia basicola (Berk. and Br.) Zopf, black root-rot. Conn., N. Y., Pa., Del., Ohio, Calif.

Mosaic, undet. Atlantic coast; Ohio, Wis., N. Mex.

LAVATERA.

Lavatera sp., treemallow.

Colletotrichum malvarum A. Braun and Casp., anthracnose. Calif. Puccinia malvacearum Bertero, rust. Calif.

LESPEDEZA.

*L. striata, Japan clover.

Heterodera radicicola (Greef) Muell., root-knot. Ala. Microsphaera diffusa Cke. and Pk., powdery mildew. S. C., Ala., Miss.

LIBOCEDRUS.

L. decurrens, incense-cedar.

Gymnosporangium blasdaleanum (Diet. and Holw.) Kern, rust. Oreg., Calif.

Herpotrichia nigra Hartig, matting. Calif.

Phoradendron juniperinum libocedri Engelm., mistletoe. Nev., Oreg., Calif.

Polyporus amarus Hedge., pecky heartwood rot. Oreg., Calif.

LIGUSTRUM.

Ligustrum sp., privet.

Armillaria mellea (Vahl) Quel., root-rot. Miss.

Bacterium tumefaciens EFS and Town. (Phytomonas tumefaciens (EFS and Town.) Com. S. A. B.), crown-gall. Miss.

Cercospora adusta Heald and Wolf, leaf-spot. C. ligustri Roum., leaf-spot. Miss.

Exosporium concentricum Heald and Wolf, leaf-spot,

Glomerella cingulata (Ston.) Spauld. and Schrenk, anthracnose. Widespread east of Great Plains.

Heterodera radicicola (Greef) Muell., root-knot. Miss.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-rot. Tex.

Phyllosticta ovalifolii Brun., leaf-spot. Tex.

LILIUM.

Lilium spp., lily (mostly native species).

Corticium vagum Berk. and Curt., stem-rot. Mich. Uromyces holwayi Lagh., rust. Widespread.

L. longiflorum, Easter lily.

Botrytis cinerea Auct., gray-mold. Fla.

Cercospora unicolor Sacc. and Penz., leaf-spot. Fla.

Fusarium sp., wilt. Fla.

Sclerotinia sclerotiorum (Lib.) Mass., wilt.

LINUM.

L. usitatissimum, flax.

Alternaria sp., boll disease. Minn., N. Dak. Colletotrichum linicolum Peth. and Laf., anthracnose. Mich., Minn., N. Dak., Mont.

Bak., Molt.
Fusarium lini H. L. Bolley, wilt. General in States where flax is grown.

Heterodera radicicola (Greef) Muell., root-knot.

Macrosporium sp., blight. N. Dak.

Melampsora lini (Schum.) Desm., rust. General.

Phlyctaena linicola Speg., pasmo. Mich., Wis., Minn., N. Dak., S. Dak.

Rhizoctonia sp., root-rot. Minn., N. Dak.

Heat canker, nonpar. Wis., Minn., N. Dak., S. Dak., Mont., Idaho.

LIQUIDAMBAR.

L. styraciflua, sweetgum.

Cercospora liquidambaris Cke. and Ell., leaf-spot. Md., Ga., Gulf States. C. tuberculans Ell. and Ev., leaf-spot. La., Miss., Mo. Hymenochaete agglutinans Ell., twig-blight.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.),

root-rot. Tex.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Ohio, Tex. Septoria liquidambaris Cke. and Ell., leaf-spot. Mass., N. J., Ga. Stereum subpileatum Berk. and Curt., honeycomb heart-rot. Fla.

LIRIODENDRON.

L. tulipifera, tuliptree.

Cercospora liriodendri Ell. and Hark., leaf-spot. Middle Atlantic States, Gulf States.

Cylindrosporium cercosporoides Ell. and Ev., leaf-spot. Md. Erysiphe polygoni DC., powdery mildew. General over range of host. Gloeosporium liriodendri Ell. and Ev., anthracnose. Conn., Del., Tex.,

Myxosporium longisporium Edg., twig canker. N.Y. Phyllactinia corylea (Pers.) Karst., powdery mildew. N. Y., Ala., Ind., Ill.

LIRIODENDRON—Continued.

L. tulipifera, tuliptree—Continued.

Phyllosticta liriodendrica Sacc., leaf-spot. General over range of host.

Polyporus sulphureus (Bull.) Fr., brown-checked wood-rot. Rhytisma liriodendri Wallr., tar-spot. Ohio.

Verticillium sp., canker. Ohio.

LOLIUM.

L. multiflorum, Italian ryegrass.

Claviceps purpurea (Fr.) Tul., ergot. Wash., Oreg.

Colletotrichum sp., anthracnose. Wash.

Helminthosporium siccans Drechs., leaf-spot. Md., Va.

L. perenne, perennial ryegrass.

Claviceps purpurea (Fr.) Tul., ergot. Va., W. Va., S. Dak., Nebr., Kans., Idaho, Calif.

Colletotrichum graminicolum (Ces.) Wils., anthracnose.

Gibberella sp., root-rot. Pa.

Helminthosporium siccans Drechs., leaf-spot. Md., Va.

Puccinia coronata Cda., rust. Pacific coast.

P. glumarum (Schm.) Ériks. and Henn., stripe-rust. Wash., Oreg.

P. graminis Pers., stem-rust. Minn.

LONICERA.

Lonicera spp., honeysuckle.

Bacterium tumefaciens EFS. and Town., crown-gall. Cercospora antipus Ell. and Holw., leaf-spot. Iowa, Nebr.

C. varia Pk., leaf-spot. Tex.

Ohio. Fusarium sp., stem-blight.

Gloeosporium lonicerae Hark., leaf-spot. Calif.
Leptothyrium periclymeni (Desm.) Sacc. Wis., Idaho.
Marssonia lonicerae Hark., leaf-spot. Colo.

Marssonia lonicerae Hark., leaf-spot. Colo.

Microsphaera alni (Wallr.) Wint., powdery mildew. Frequent in northern
half of United States.

Puccinia festucae Plow., rust. Iowa.

LUPINUS.

L. perennis, sun-dial lupine.

Ascochyta pisi Lib. (Mycosphaerella pinodes (Berk. and Blox.) R. E. Stone), leaf-spot.

Cercospora filispora Pk., leaf-spot.

C. longispora Pk., leaf-spot. N. Y.

Erysiphe polygoni DC., powdery mildew. Mass., N. Y., N. J., Md., Ohio, Ill., Mich.

Sclerotinia sclerotiorum (Lib.) Mass., stem-rot. N. Y.

L. polyphyllus, Washington lupine.

Uromyces lupini Berk. and Curt., rust. Wash.

LYCOPERSICUM.

L. esculentum, tomato.

Alternaria sp. (not A. solani nor M. tomato), leaf-spot. Calif. A. solani (Ell. and Mart.) L. R. Jones and A. J. Grout, early-blight. General

east of Great Plains; nailhead spot especially in Southern States.

Aplanobacter michiganense EFS. (Phytomonas michiganense (EFS.) Com.
S. A. B.), bacterial canker (Grand Rapids disease). Mass., Conn., N. J.,
Pa., Ga., Ohio, Ind., Mich.

Ascochyta lycopersici Brun. (Didymella lycopersici Kleb., Diplodina destruc-

tiva (Plow.) Petr.), leaf-spot. N. J.

Bacillus aroideae Town. (Erwinia aroidea (Town.) Com. S. A. B.), soft-

B. carotovorus L. R. Jones (Erwinia carotovora (Jones) Com. S. A. B.), softrot. N. J., Fla.

Bacterium solanacearum EFS. (Phytomonas solanaceara (EFS.) Com. S. A. B.), bacterial wilt. For the most part east of Great Plains and south of Missouri and Ohio Rivers.

LYCOPERSICUM-Continued.

L. esculentum, tomato-Continued.

B. vesicatorium Doidge (Phytomonas exitiosa (Gardner and Kendrick) Com. S. A. B.), bacterial spot. N. Y., Pa., Tenn., Ga., Fla., Ind., Ill., Mich., Iowa, Kans.

Basisporium gallarum M. Molliard, fruit-rot. Calif.

Botrytis cinerea Auct., gray-mold rot. N. J., Ohio, Ky., Ala. Cercospora cruenta Sacc., leaf-spot. S. C., Ala., Iowa.

Cladosporium fulvum Cke., leaf-mold. General. Colletotrichum phomoides (Sacc.) Chester, anthracnose. East of Great Plains; Wash., Calif.

Corticium vagum Berk. and Curt., stem-rot, soil-rot. General. Fusarium lycopersici Sacc., Fusarium wilt. Conn. to Nebr. and southward, Calif.

Glomerella cingulata (Ston.) Spauld. and Schrenk, anthracnose. Mich., Fla., La.

Heterodera radicicola (Greef) Muell., root-knot. General in South.

Isaria clonostachoides F. J. Pritchard and W. S. Porte, fruit-rot. Va., D. C. Macrosporium tomato Cke., nailhead spot. Fla. and other Southern States. Melanconium sp., fruit-spot. Ohio, Wis. Nematospora lucopersici A. Schneider, fruit-rot. Calif.

Olpidium sp., seedling blight. Wis.

Oospora lactis parasitica F. J. Pritchard and W. S. Porte, fruit-rot. N. J., Va., D. C.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), rootrot. Tex., Ariz.

Phoma destructiva Plow. (Diplodina destructiva (Plow.) Petr.), ripe-rot, leafspot. Widespread.

Phyllosticta sp., leaf-spot. Fla.

Phytophthora sp. (D. Reddick), stem girdle. N. Y.

P. infestans (Mont.) D By., late-blight, damping-off. Atlantic and Pacific Coast States.

P. terrestris Sherb., buckeye rot. South Atlantic and Gulf States; Va., Ark., Tenn., Ind.

Pythium debaryanum Hesse, damping-off. New England, N. Y., Ohio, Pa., Wash.

Rhizopus nigricans Ehr., black-mold rot. Frequent in harvested crop. Sclerotinia sclerotiorum (Lib.) Mass., stem-rot, fruit-rot. General.

Sclerotium rolfsii Sacc., stem-rot. Southern States.

Septoria lycopersici Speg., leaf-spot. General, but infrequent in West. Synchytrium endobioticum (Schilb.) Perc., wart. Pa. Verticillium alboatrum Reinke and Berth., wilt. Northern States. V. lycopersici F. J. Pritchard and W. S. Porte, collar rot. N. J., Del., Md.

Blossom-end rot, nonpar. General. Mosaic, undet. General.

Ocdema, nonpar. N. Y., Ind., Fla.
Streak or winter blight, undet. Common in greenhouses, Mass., N. Y.,
N. J., Pa., Ohio, Ind., Mich.
Yellow blight, undet. Western States.

LYONIA.

L. ligustrina, *maleberry.

Exobasidium vaccinii Wor., hypertrophy. Mass., N. Y., N. J., Fla., Ala. Microsphaera alni vaccinii Berk. and Curt., powdery mildew. Pucciniastrum myrtilli (Schum.) Arth., rust. Del., Va., Ala. Rhytisma andromedae Fr., tar-spot. N. J., Va. R. decolorans Schw., tar-spot. Me., Mass., N. J., Fla., Ga., Ala.

MACLURA.

M. pomifera, Osage-orange.

Cerotelium fici (Cast.) Arth., rust. S. C., Ga., La.
Ovularia maclurae Ell. and A. B. Langlois, cottony leaf-spot. La., Tex.
Tex., Ind. Phoradendron flavescens (Pursh) Nutt., mistletoe. Phyllosticta maclurae Ell. and Ev., leaf-spot. N. J. Sporodesmium maclurae Thuem., leaf-spot.

MAGNOLIA.

Magnolia sp., magnolia.

Cladosporium fasciculatum Cda., Tex. Colletorichum sp., anthraenose. Mass., S. C., Fla.

Coniotagiam olivaceum grandiflorae Sacc., leaf-spot. Tex. Phyliosticia cookei Sacc., leaf-spot. N. Y., S. C., Miss., Calif. P. terminalis Ell. and Mart., leaf-spot. N. J.

Septoria magnoliae Cke., leaf-spot. Fla.

M. acuminata, cucumbertree.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Ohio. Phyllosticta cookei Sacc., leaf-spot. W. Va.

M. glauca, sweetbay.

Cercospora magnoliae Ell. and Hark., leaf-spot. N. J.

Cladosporium fasciculatum Cda. N. J.

Dimerosporium magnoliae Tr. and Earle, sooty mold. Miss.

Macrosporium martindalei Ell. and Mart., leaf-spot. N. J.

Phyllosticta cookei Sacc., leaf-spot. N. J., Fla.

P. glauca Cke., leaf-spot. S. C., Fla., Ala.

M. grandiflora, southern magnolia.

Coniothyrium olivaceum grandiflorae Sacc., leaf-spot. Tex. Leptothyrella langloisii (Ell. and Ev.) Sacc. La.

Phyllosticta cookei Sacc., leaf-spot. Fla., Miss., La.
Septoria magnoliae Cke., leaf-spot. S. C., Ga., La., Tex.
S. niphostoma Berk. and Curt., leaf-spot. N. C., S. C., Ga.

MAHONIA.

Mahonia spp. (native western species), hollygrape, Oregon grape.

Puccinia graminis Pers., rust. Mich., Mont., Colo., N. Mex., Wash.

P. koeleriae Arth., rust. Mont., Colo., Idaho, Oreg. P. oxalidis Diet. and Ell., rust. N. Mex. Uropyxis sanguinea (Pk.) Arth., rust. Western States.

MALUS.

M. baccata, Siberian crab apple.

Bacillus amylovorus (Burr.) Trev. (Erwinia amylovora (Burr.) Com. S. A. B.), blight. Ohio, W. Va., Tex., Wash.

Gymnosporangium globosum Farl., rust.

G. juniperi-virginianae Schw., rust. Md.

Phyllosticta solitaria Ell. and Ev., blotch. Ohio.

Physalospora malorum (Pk.) Shear (P. cydoniae Am. Auct.), black-rot.

Venturia inaequalis (Cke.) Aderh., scab. Ohio, Nebr. Ohio.

M. coronaria, wild sweet crab apple.

Ascochyta coronaria Ell. and Davis, leaf-spot. Wis.

Bacillus amylovorus (Burr.) Trev. (Erwinia amylovora (Burr.) Com. S. A.

W. Va. B.), blight.

Cercosporella persicae Sacc., leaf-spot. Ill. C. pyrina Ell. and Ev., leaf-spot. Wis.

Gymnosporangium juniperi-virginianae Schw., rust. General east of Great Plains.

Nummularia discreta (Schw.) Tul., blister canker. W. Va.
Phyllosticta solitaria Ell. and Ev., blotch. W. Va., Ind.
Physalospora malorum (Pk.) Shear (P. cydoniae Am. Auct.), black-rot.
Ill. N.Y.,

Podosphaera oxyacanthae (DC.) D By., powdery mildew. Wis.

M. ioensis, prairie crab apple.

Cercosporella pyrina Ell. and Ev., leaf-spot. Wis.
Gymnosporangium juniperi-virginianae Schw., rust. East of Great Plains.
Marssonia coronariae Sacc. and Dearn., leaf-spot. Mo.
Phyllosticta zonata Ell. and Ev., leaf-spot. Iowa.
Venturia inaequalis (Cke.) Aderh., scab. Ill., Wis., Iowa, Nebr.

M. sylvestris, apple.

Alternaria sp., fruit-spot, fruit-rot. Reported from 11 scattered States. A. mali J. W. Roberts, leaf-spot. Va., Md., Tenn., Ark., Mo.

MALUS-Continued.

M. sylvestris, apple—Continued.

Armillaria mellea (Vahl) Quel., root-rot. General, especially in Pacific Northwest.

Bacillus amylovorus (Burr.) Trev. (Erwinia amylovora (Burr.) Com. S. A. B.), blight. General.

Bacterium tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall, hairy-root. General.

Botryosphaeria ribis Gross. and Dug., black-rot. Va., Ga., Ark.

Botrytis cinerea Auct., fruit-rot. Wash.

General, especially east of Rocky Cephalothecium roseum Cda., pink-rot.

Cercospora mali Ell. and Ev., leaf-spot. Ala., Miss., La., Tex.

Clitocybe monadelpha (Morgan) Sacc., root-rot. Va., W. Va., N. C., Ind., Mo., Ark., Okla., Tex., Colo., Ariz., Wash. Comandra pallida DC., bastard toadflax. Wa Corticium laetum Karst., limb-blight. La.

C. stevensii Burt (Hypochnus ochroleucus F. Noack), leaf-blight. S. C., Ga., Ala., Miss., Tex., Ind.

Fomes applanatus (Pers.) Wallr. (Ganoderma applanatum (Pers.) Pat.), whitestreaked rot. Ind.

F. fomentarius (L.) Fr., white sapwood rot. Mont.

F. igniarius (L.) Fr., white heart-rot. Conn., N. Y.

Fusicoccum pyrorum C. Chupp and G. L. Clapp, canker. N. Y., Md.

Glocodes pomigena (Schw.) A. S. Colby (Phyllachora pomigena (Schw.) Sacc.), sooty blotch. New England to N. C. and westward to Nebr.

Gloeosporium perennans Zeller and Childs, perennial canker. Wash., Oreg. Glomerella cingulata (Ston.) Spauld. and Schrenk, bitter-rot. Mass. to Nebr. and southward; occasionally in Pacific Coast States.

Gymnosporangium blasdaleanum (Diet. and Holw.) Kern, rust. Oreg.

G. germinale (Schw.) Kern, rust. Mass., R. I., Va.
G. globosum Farl., rust. New England south to Ga.
G. juniperi-virginianae Schw., rust. General east of Great Plains.
Leptosphaeria coniothyrium (Fckl.) Sacc., orange pox canker. Middle Atlantic

States; Ohio, Ind., Minn., Kans.

Leptothyrium pomi (Mont. and Fr.) Sacc., flyspeck. East of Great Plains; occasionally collected in Northwest.

Myxosporium corticolum Edg. (Dermatea corticola (Edg.) Arn.), surface bark canker. New England, N. Y., Pa., Md., Ohio, Mich., S. Dak., Oreg' Nectria galligena Bres., European canker. Me. to Ill. and N. C., Minn.,

Pacific coast.

Neofabraea malicorticis (A. B. Cordley) Jack., anthracnose, black-spot canker. Pacific Northwest; Mont., Nev., Calif.

Numularia discreta (Schw.) Tul., blister canker. East of most destructive in Miss. Valley States; N. Dak., S. Dak.

East of Rocky Mts.,

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), rootrot. Ark., Tex., N. Mex., Ariz.

Penicillium expansum (Lk.) emend. Thom, blue-mold rot. General in stored fruit.

Phoma mali Schulz. and Sacc., twig-blight. Me., Mass., Md., W. Va., Okla., N. Mex.
P. pomi Pass., fruit-spot. Me. to N. C., and westward to Ark. and Iowa.

Phomopsis mali J. W. Roberts, rough-bark disease. Va., Ohio, Ill., Pacific

Phoradendron flavescens (Pursh) Nutt., mistletoe.

Phyllosticta clypeata Ell. and Ev., leaf-spot. Oreg

P. limitata Pk., leaf-spot. Mass., N. Y., W. Va., N. C., Ind.

P. prunicola Sacc., leaf-spot. Ohio. P. solitaria Ell. and Ev., blotch. East of Great Plains except New England

Physalospora malorum (Pk.) Shear (P. cydoniae Am. Auct.), black-rot, frog-eye. General, especially east of Great Plains.

Phytophthora cactorum (Leb. and Cohn) Schroet., fruit-rot. Conn., N. Y., Pa., Va., Ind., Mich., Idaho, Wash. Plenodomus fuscomaculans G. H. Coons, canker. Mich., Calif.

MALUS-Continued.

M. sylvestris, apple—Continued.

Podosphaera leucotricha (Ell. and Ev.) Salm., powdery mildew. General, most destructive in Western States.
P. oxyacanthae (DC.) D By., powdery mildew. General.
Polyporus lacteus Fr., sap-rot and heart-rot. Va., Ind., Idaho, Wash., Oreg. Polystictus versicolor (L.) Fr., yellowish wood-rot. N. Y., Mo., Kans., Pacific coast.

Pseudomonas papulans D. H. Rose, blister spot. Mo.

Schizophyllum commune Fr., heart-rot. North of Ohio and Mo. Rivers: Kans., Nebr., Pacific coast.

Schroet. Sclerotinia cinerea (Bon.) (Monilia oregonensis Barss and Posey), blossom blight. Wash., Oreg.

S. fructicola (Wint.) Rehm (S. americana (Wormald) Norton and Ezekiel) brown-rot. East of Great Plains; Pacific coast.

Septobasidium sp., canker. N. Y., Miss., Tex. S. pseudopedicellatum Burt, canker. N. C.

S. retiforme (Berk. and Curt.) Pat., canker. Southern States.

Stereum purpureum Pers., associated with silver-leaf. Me., N. Y., Minn., Wash.

Valsa spp. (Cytospora spp.), die-back, canker. New England, N. Y., Pa., Ill., Minn., Western States.

Venturia inaequalis (Cke.) Aderh., scab. Reported from every State except Fla., La., Tex., Ariz., Nev., Utah, Wyo. Most serious in East.

Volutella fructi F. L. Stevens and J. G. Hall, spongy dry-rot. Mass., N. Y., Pa., W. Va., N. C., Ind.

Xylaria spp., black root-rot. N. Y., Pa., Va., W. Va., Tenn., N. C., S. C., Ga., Ark., Ind., Ill., Mich., Iowa, Kans.

Black-heart, nonpar. Md., Va., Nebr., Mont.
Chlorosis, nonpar. Me., N. Y., Pa., S. Dak., N. Mex., Wyo., Wash.
Jonathan spot, undet. Eastern apple sections to Nebr. and Kans.; Colo., Idaho, Pacific coast.

easles, undet. Pa., Md., Va., W. Va., S. C., Ala., Ark., Tex., Ohio, Ill., Mich., Mo., Kans., Colo., N. Mex. Measles, undet.

Mosaic, undet. N. Y.

Rosette, undet. Del., Md., Kans., Colo., Pacific Northwest.

General on stored fruit. Scald, nonpar.

Tan disease, undet. Md., Wash. Water-core, nonpar. General.

MANGIFERA.

M. indica, mango.

Glomerella cingulata (Ston.) Spauld. and Schrenk, anthracnose. Fla. Phyllosticta mortoni Fairman, leaf-spot. Fla.

MANIHOT.

M. esculenta, cassava.

Cercospora cassavae Ell. and Ev., leaf-spot. Gloeosporium manihotis P. Henn., wither-tip. La.

MEDICAGO.

M. maculata, southern bur clover.

Cercospora medicaginis Ell. and Ev., leaf-spot. Southern States. Pseudoplea medicaginis Miles, leaf-spot. Ala.

M. sativa, alfalfa.

Plains.

Aplanobacter insidiosum McC., bacterial root-rot. Ala., Ind., Ill., Wis.,

Ascochyta imperfecta Pk., leaf-spot. N. Y., Ky., Ill., Wash.

Bacterium medicaginis (Sack.) EFS. (Phytomonas medicaginis (Sack.) Com.
S. A. B.), bacterial blight. General, especially in Western States.

B. tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.)

Com. S. A. B.), crown-gall. Md., Va., Ky., Ala.

Cercospora medicaginis Ell. and Ev., leaf-spot. East of Great Plains.

Collectric house. In State S. M. Peire, and Property of Great of Great Plains.

Colletotrichum trifolii S. M. Bain, anthracnose. General east of Great

MEDICAGO -- Continued.

M. sativa, alfalfa—Continued.

Cuscuta sp., dodder. Frequent where alfalfa is grown.

Fusarium sp., root-rot. S. C., Va., Ohio, N. Dak., Kans., N. Mex., Utah. Nev.

Gloeosporium medicaginis Ell. and Kell., anthracnose. Va., Kans., Okla. Heterodera radicicola (Greef) Muell., root-knot. N. Y., N. J., Tex. Macrosporium sp., leaf-spot. Me., Pa., N. J., Md., Va., W. Va., La., Tex., Gloeosporium medicaginis Ell. and Kell., anthracnose.

Mich., Mo.

M. Sarcinaeforme Cav., black-mold. Ill.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), rootrot. Ark., Okla., Tex., Southwest.

Peronospora trifoliorum D By., downy mildew. General.

Pleosphaerulina briosiana Poll., leaf-spot. Va., Ky., Ala., Ga., Ind., Ill.,

Wis., Minn., Iowa, Mo., S. Dak., Kans.

Pseudopeziza medicaginis (Lib.) Sacc., leaf-spot. General.

General.

Pyrenopeziza medicaginis Fckl., yellow leaf-blotch. Rhizoctonia crocorum (Pers.) DC., violet root-rot. Middle Atlantic States;

Miss. Valley; Pacific Northwest.

Sclerotinia trifoliorum Eriks., stem-rot. Mostly east of Miss. River; Pacific coast.

COBST.

Sclerotium rolfsii Sacc., stem-rot. Va., La.

Stagonospora sp., leaf-spot. N. Y., N. J., Del., Ill.

Thielavia basicola (Berk. and Br.) Zopf, black root-rot. Mass., N. J., Tex.

Tylenchus dipsaci (Kuehn) Bast., stem nematode. Wyo., Colo., N. Mex.,

Idaho, Oreg., Calif.

Uromyces medicaginis Pass., rust. General.

Urophlyctis alfalfae (Lagh.) Magn., crown-wart. West of Rocky Mts.

Girdle, undet. Ariz.

Yellowing, undet. General, especially in the eastern United States.

MELIA.

M. azedarach, chinaberry.

Cercospora leucosticta Ell. and Ev., leaf-spot. Ala., Miss., La.

C. meliae Ell. and Ev., leaf-spot. La. Nectria cinnabarina (Tode) Fr., canker. S. C.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-Tex., Ariz.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Phyllosticta meliae Ell. and Ev., leaf-spot. La.

M. azedarach umbraculiformis, Texas umbrella-tree.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), rootrot. Tex.

MELILOTUS.

M. alba, white sweetclover.

Ascochyta meliloti (Trel.) Davis, leaf-spot. Occurs in widely scattered

Cercospora davisii Ell. and Ev., leaf-spot. Ala., Md., Ind., Wis., Minn., Iowa, Kans.

Colletotrichum trifolii S. M. Bain, anthracnose. Ill.

Corticium vagum Berk. and Curt., stem-rot. Ala., Mich., I Fusarium sp., root-rot. Tenn., N. Dak., N. Mex. Gloeosporium sp., anthracnose. Ill., Wis., Kans. Heterodera radicicola (Greef) Muell., root-knot. S. C., Ala. Mycosphaerella lethalis R. E. Stone, stem-spot. N. Y. Ala., Mich., Mont., Wash.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-

Peronospora trifoliorum D By., downy mildew. Sclerotinia trifoliorum Eriks., root-rot. Ky., Wash. Stagonospora meliloti (Lasch) Petr., leaf-spot. Wis.

Mosaic, undet. Ark., N. Dak.

58433-26t-5

MENISPERMUM.

M. canadense, moonseed.

Cercospora menispermi Ell. and Holw., leaf-spot. W. Va., Iowa, Kans. Entyloma menispermi Farl. and Trel., smut. North-Central States. Phyllosticta abortiva Ell. and Kell., leaf-spot. Kans. Ramularia contexta Ell. and Ev., leaf-spot. N. Dak.

MENTHA.

M. piperita, peppermint.

Puccinia menthae Pers., rust. Mass., Calif.

M. spicata, spearmint.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Wash.

Phyllosticta decidua Ell. and Kell., leaf-spot. Ohio.
Puccinia menthae Pers., rust. Mass., N. Y., Ohio, Mich., Ind., Ky., Wis.,

MIRABILIS.

M. jalapa, common four-o'clock.

Albugo platensis (Speg.) Sw., white-rust. Tex. Cercospora mirabilis Tharp, leaf-spot. Tex.

MORUS.

Morus sp., mulberry.

Armillaria mellea (Vahl) Quel., root-rot. Del.

Bacterium mori (Boyer and Lambert) emend. EFS. (Phytomonas mori
(Boyer and Lambert) Com. S. A. B.), mulberry blight. Widespread.

Cercospora missouriensis Wint., leaf-spot. Tex.
C. moricola Cke., leaf-spot. Widespread east of Great Plains.
C. pulvinulata Sacc. and Wint., leaf-spot. Nebr., Kans.
Cercosporella mori Pk., leaf-spot. Nebr., Tex.

Exosporium sp., leaf-spot. Fla.

Gibberella moricola Ces. and DeNot., twig-blight. Pa., Wis.

Hymenochaete agglutinans Ell., heart-rot. Md. Myxosporium diedickei Syd., twig-blight. Tex., Wash. Mycosphaerella morifolia (Fckl.) Lindau, leaf-spot. Ind.

Nectria sp., bark disease, canker. N. J., Ky., Ala., Ark., Ind., Kans.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-Tex., Ariz.

Phleospora maculans (Bereng.) Allesch., leaf-spot. Widespread east of Great Plains.

P. moricola (Pass.) Sacc., leaf-spot. Pa., Md., Kans.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Ohio.

Sclerotinia carunculoides E. A. Siegler and A. Jenkins, pop-corn disease.
S. C., Ga., Ala., Miss., La., Tex.

Uncinula geniculata W. R. Gerard, powdery mildew. Widespread east of

Great Plains.

MUSA.

Musa sp., banana.

Fusarium sp., Panama wilt. Fla.

Gloeosporium musarum Cke. and Mass., stem-rot, fruit-rot. Fla.

Heterodera radicicola (Greef) Muell., root-knot. Fla.

MYRICA.

Myrica spp. (M. cerifera and M. carolinensis), bayberry, waxmyrtle.

Cercospora diffusa Ell. and Ev., leaf-spot. N. J. C. myricae Tr. and Earle, leaf-spot. Miss.

C. penicillus Ell. and Ev., leaf-spot. N. J., Miss.
Gymnosporangium myricatum (Schw.) F. D. Fromme, rust. Mass., N. J.,

Phyllosticta myricae Cke., leaf-spot. N. J., S. C., Fla. Ramularia monilioides Ell. and Mart., leaf-spot. Mass., N. Y.

Septoria myricae Ell. and Ev., leaf-spot. N. J.

NARCISSUS.

Narcissus sp., narcissus, jonquil.

Botrytis sp., blight. Wash.

Tulenchus dipsaci (Kuehn) Bast., bulb nematode. Ill., Oreg., Calif. Mosaic (gray disease), undet. Wash.

NERIUM.

N. oleander, oleander.

Bacterium savastanoi EFS. (Phytomonas savastanoi (EFS.) Com. S. A. B.). gall. Ariz.

Cercospora neriella Sacc., leaf-spot. La., Tex.

Macrosporium nerii Cke., leaf-spot. Ga., Fla., Miss., Calif.

Phyllosticta nerii West., leaf-spot. Fla., La., Mich.

Septoria sp., specked leaf-spot. Fla. S. oleandrina Sacc., leaf-spot. Fla., La.

NICOTIANA.

N. tabacum, tobacco.

Bacillus carotovorus L. R. Jones (Erwinia carotovora (Jones) Com. S. A. B.).

hollow-stalk. Conn.

Bacterium angulatum F. D. Fromme and T. J. Murray, angular leaf-spot, black-fire. Mass., Conn., N. Y., Md., Va., N. C., S. C., Tenn., Ky., Ind., Wis.

B. melleum James Johnson, bacterial leaf-spot. Ky., Wis. B. solanacearum EFS. (Phytomonas solanaceara (EFS.) Com. S. A. B.), bacterial wilt, Granville wilt. Southern States; Ohio.

B. tabacum Wolf and A. C. Foster (Phytomonas tabaca (Wolf and Foster))

Com. S. A. B.), wild-fire. General.

Cercospora nicotianae Ell. and Ev., frog-eye. Atlantic Coast States; Wis.,

Corticium vagum Berk, and Curt., sore-shin. General.

Fusarium affine C. M. Slagg, leaf-spot. Conn., Ky., Wis. F. oxysporum nicotianae James Johnson, wilt. Md., Ohio, Ky., Tenn.

Heterodera radicicola (Greef) Muell., root-knot. Southern States.

Macrosporium longipes Ell. and Ev., brown-spot. Pa., N. C., Mo. M. tabacinum Ell. and Ev., white-speck. Mass., Conn., N. C., Ohio, Mo.

Wis. Olpidium sp., seedling blight.

Orobanche ramosa L., broom-rape. Ohio, Ky.

Peronospora hyoscyami D By., downy mildew. Ga., Fla.
Phyllosticta nicotiana Ell. and Ev., leaf-spot. Mass., Va., N. C.
Phytophthora nicotianae (Speg.) Van Breda de Haan, black-shank. Ga., Fla.

Pythium debaryanum Hesse, damping-off. General.

Sclerotinia sclerotiorum (Lib.) Mass., stem-rot. Conn.

Sclerotium rolfsii Sacc., stem-rot. N. C.

Thielavia basicola (Berk. and Br.) Zopf, black root-rot. General.

Brown root-rot, undet. Mass., Conn.

Frenching, undet. Va., N. C., Ky., Ohio, Wis.

Leaf-spots including "rust," firing, ring-spot, etc., nonpar. Widespread.

Mosaic, undet. General.

Sand-drown, nonpar. N. C.

NYSSA.

N. aquatica, big tupelo.

Aplopsora nyssae (Ell.) E. B. Mains, rust.

Phyllosticta nyssae Cke., leaf-spot. Ga., Ala.

N. sylvatica, *sour gum, tupelo, *pepperidge. Leptothyrium dryinum Sacc., leaf-spot. Ala.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Tex.

Phyllosticta nyssae Cke., leaf-spot. N. Y Pirostoma nyssae L. R. Tehon, leaf-spot. N. Y.

OLEA.

O. europaea, olive.

Armillaria mellea (Vahl) Quel., root-rot. Calif.

Bacterium savastanoi EFS. (Phytomonas savastanoi (EFS.) Com. S. A. B.), knot. Calif.

OLEA-Continued

O. europaea, olive—Continued.

Cycloconium oleaginum Cast., leaf-spot. Calif.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-

ORYZA.

O. sativa, rice.

Cercospora oryzae Miyake, leaf-spot. La.

Corticium vagum Berk, and Curt., foot-rot. Ark Fusarium minimum Fckl., wilt. La. Helminthosporium sp., leaf-spot. S. C., Ark. H. oryzae Van Breda de Haan, blight. Fla., La.

Ophiobolus sp., foot-rot. Ark.

Phoma glumarum Ell. and Tr., glume-blight. Miss.

Piricularia grisea (Cke.) Sacc., blast. Occurs in all States where rice is

Sclerotium oryzae Catt., stem-rot. La., Ark. Scierotium oryzae Catt., stem-100. S. rolfsii Sacc., seedling blight. La.

Sphaerotheca sp., powdery mildew. Tilletia horrida Tak., black-smut.

S. C., Ga., La., Ark. Ustilaginoidea virens (Cke.) Tak., green-smut. Ga., La. Straighthead, nonpar. General in States in which rice is grown.

OSMANTHUS.

Osmanthus sp., osmanthus.

Phyllosticta oleae Ell. and Mart., leaf-spot. Fla. P. sinuosa Ell. and Mart., leaf-spot. Fla., Miss. P. terminalis Ell. and Mart., leaf-spot. Fla.

OSTRYA.

O. virginiana, hophornbeam.

Fomes igniarius (L.) Fr., white heart-rot. N. Dak., S. Dak.

Gloeosporium robergiae Desm., leaf-spot.

G. robergiae dendriticum Davis, leaf-spot. Pa.

Microsphaera alni (Wallr.) Wint., powdery mildew. N. Y., Ill., Iowa.

Phyllactinia corylea (Pers.) Karst., powdery mildew. General over range of

Septoria ostryae Pk., leaf-spot. N. Y.

Taphrina virginica Seym. and Sadeb., leaf-spot. N. H., Mass., Ala., Wis.

OXYDENDRUM.

O. arboreum, sourwood.

Cercospora oxydendri Tr. and Earle, leaf-spot. Phyllosticta oxydendri Ell. and Ev., leaf-spot. W. Va.

PAEONIA.

Paeonia sp., peony.

Armillaria mellea (Vahl) Quel., root-rot. Mich., Oreg. Bacterium tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall. Mich.

Botrytis sp., seed-rot. Pa.
B. paeoniae Oud., blight. Widespread.
Cerospora variicolor Wint., leaf-spot. Ind., Ky., Mo., Nebr.

Cladosporium paeoniae Pass., leaf-mold. General.
Clatosporium paeoniae Pass., leaf-mold. General.
Corticium vagum Berk. and Curt., stem-rot. Minn.
Fusarium sp., root-rot, stem-rot. Ind., Mo., Nebr.
Heterodera radicicola (Greef) Muell., root-knot. N. Y., Pa., S. C., Miss.,
Ohio, Ind., N. Dak., Nebr., Wash.
Phyllosticta commonsii Ell. and Ev., leaf-spot. Del., Ind.

Phytophthora sp., blight. Conn., Pa., Ind., Kans.

Septoria paeoniae berolinensis Allesch., leaf-spot.

Verticillium alboatrum Reinke and Berth., wilt. Kans. Mosaic, undet. Mass., Conn., Va., Ohio, Kans., Wash.

PANAX.

P. quinquefolium, American ginseng.

Alternaria panax Whet., blight. General; N. Y. to Minn. southward to Kans. and N. C.

Botrytis sp., gray-mold. Conn., N. Y., Mich., Wash. Corticium vagum Berk. and Curt., stem-rot. N. Y., Fusarium sp., wilt. N. Y., Ala., Ohio, Mo. N. Y., Wash.

Heterodera radicicola (Greef) Muell., root-knot. N. Y., Pa., Ohio, Mich., Wis.

Pestalozzia funerea Desm., leaf anthracnose. Mo.

Phytophthora cactorum (Leb. and Cohn) Schroet., blight, downy mildew. Conn., N. Y., Pa., Ohio, Ind., Mich., Iowa, Wash.

Ramularia destructans C. L. Zinssmeister, root-rot. Wis.

R. panacicola C. L. Zinssmeister, root-rot. N. Y., Wis.

Ramutaria destructions C. L. Zinssmeister, root-rot. Wis.

R. panacicola C. L. Zinssmeister, root-rot. N. Y., Wis.

Sclerotinia panacis W. H. Rankin, black-rot. N. Y., Mich., Wis.

S. sclerotiorum (Lib.) Mass., white-rot. N. Y., Pa., Ohio, Mich., Wis.

S. smilacina E. J. Durand, black-rot. N. Y., Mich., Wis.

Thielavia basicola (Berk. and Br.) Zopf, black root-rot. General

General where ginseng is grown.

Vermicularia dematium (Pers.) Fr., stem anthracnose. N. Y., Va., N. C., Tenn., Ohio, Ill., Minn., Mo.

Verticillium alboatrum Reinke and Berth., wilt. N. Y., Pa., N. J., Tenn.,

Ky., Ohio, Mich., Ind. Damping-off, associated with various fungi. General.

Papery leaf-spot, nonpar. N. Y., Mich. Soft-rot, undet. N. Y., Pa., Ohio, Ind.

PANICUM.

P. miliaceum, proso millet, broomcorn millet.

Bacterium panici C. Elliott, bacterial stripe. Wis., S. Dak. Fusarium rhizochromatistes C. P. Sideris, root-rot. Calif. Phyllachora graminis (Pers.) Fckl., black-blotch. Tex. Piricularia grisea (Cke.) Sacc., leaf-spot. Minn., Ohio.

Puccinia emaculata Schw., rust. Ind.

Sclerospora graminicola (Sacc.) Schroet., downy mildew. Wis., Minn., Iowa. N. Dak., S. Dak. Sorosporium syntherismae (Pk.) Farl., smut. N. J., Wis., Minn., Mo., N. Dak., Nebr.

Ustilago panici-miliacei (Pers.) Wint., smut. N. Dak., Colo., Wash.

PARKINSONIA.

P. aculeata, parkinsonia.

Cylindrosporium parkinsoniae Heald, leaf-spot. Tex. Dimerosporium parkinsoniae Heald and Wolf, sooty mold. Tex. Phyllosticta parkinsoniae Ell. and Ev., leaf-spot. Tex.

PASTINACA.

P. sativa, parsnip.

Bacillus carotovorus L. R. Jones (Erwinia carotovora (Jones) Com. S. A. B.),

soft-rot. Conn., Mass., Minn.

Bacterium tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall. Va.

North Atlantic and North-Cercospora apii pastinacae Farl., leaf-spot. Central States.

Corticium vagum Berk. and Curt., stem-rot. Tex., Wash.

Heterodera radicicola (Greef) Muell., root-knot. Va., Ala., La., Ohio, Ind., Kans.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), rootrot. Tex.

Ramularia pastinacae (Karst.) Lindr. and Vester., leaf-spot. N. Y., Ind., N. Dak.

Sclerotinia sclerotiorum (Lib.) Mass., watery soft-rot. Septoria pastinacina Sacc., leaf-spot, blight. N. Y., Utah.

PAULOWNIA.

P. tomentosa, *princess tree.

Ascochyta paulowniae Sacc. and Brun., leaf-spot. D. C. Phyllosticia paulowniae Sacc., leaf-spot. N. Y., D. C.

PELARGONIUM.

Pelargonium sp., geranium.

Alternaria sp., leaf-spot. Mass., La., Mich., Calif.

Alternaria sp., lear-spot. Mass., La., Mich., Cain.

Bacterium erodii I. M. Lewis, bacterial leaf-spot. Conn., Pa., N. Y., Miss.,
Ohio, Ind., Ill., Wash.

B. pelargoni N. A. Brown, bacterial leaf-spot. Mass., N. J., Md., Va., D. C.
Botrytis cinerea Auct., gray-mold. Conn., Md., La., Ohio, Mich., Minn., Kans.
Cercospora brunkii Ell. and Gall., leaf-spot. Ala., Miss., Tex.
Pythium completens H. Braun, stem-rot. D. C., Okla.

PERSEA.

P. americana, avocado.

Cercospora sp., blotch. Fla.

Glomerella cingulata (Ston.) Spauld. and Schrenk, anthracnose, leaf-spot. fruit-spot. Fla., Ga., Tex.

Phyllosticta sp., leaf-spot. Fla.

Pythiacystis citrophthora E. H. and R. E. Smith, bark disease. Calif. Sporotrichum citri Butl. (Sphaceloma fawcettii A. Jenkins), scab. Fla.

P. borbonia, redbay.

Helminthosporium fumosum Ell. and Mart., leaf-blotch. Fla. Phyllosticta micropuncta Cke., leaf-spot. D. C., Fla., Miss., La., Tex.

PETROSELINUM.

P. hortense, parsley.

Cercospora apii Fresen., leaf-spot. N. J.

Corticium vagum Berk. and Curt., root canker. N. Y Heterodera radicicola (Greef) Muell., root-knot. Tex.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), rootrot.

Sclerotinia sclerotiorum (Lib.) Mass., stem-rot. Conn., N. Y., Pa., Va.,

Septoria petroselini Desm., leaf-spot. Conn., N. J.

PETUNIA.

P. hybrida, petunia.

Ascochyta petuniae Speg., leaf-spot.

Cercospora sp., leaf-blotch. Fla.

Corticium vagum Berk. and Curt., stem-rot. Pa.

Heterodera radicicola (Greef) Muell., root-knot.

Macrosporium sarcinula parasiticum Thuem., black stalk-rot. Tex.

Mosaic, undet. Conn., Pa., S. C., La., Iowa.

PHASEOLUS.

P. acutifolius latifolius, tepary bean.

Fusarium sp., wilt. Calif.

F. martii phaseoli Burk., dry root-rot. N. Y.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-

Uromyces appendiculatus (Pers.) Lk., rust. Tex., Calif.

P. angularis, adzuki bean.

Amerosporium oeconomicum Ell. and Tr., leaf-spot. Va.

Bacterium phaseoli EFS. (Phytomonas phaseoli (EFS.) Com. S. A. B.), bacterial blight. Ind.
Fusarium martii phaseoli Burk., dry root-rot. N. Y.

F. vasinfectum Atk., wilt. Ala.

Mosaic, undet. Ind.

P. aureus, mung bean.

Bacterium phaseoli EFS. (Phytomonas phaseoli (EFS.) Com. S. A. B.), bacterial blight. Ind.

Sclerotinia sclerotiorum (Lib.) Mass., stem-rot. Va.

Mosaic, undet. Ind.

PHASEOLUS—Continued.

P. coccineus, Scarlet Runner bean.

Colletotrichum lindemuthianum (Sacc. and Magn.) Briosi and Cav. (Glomerella lindemuthiana Shear), anthracnose.

Fusarium martii phaseoli Burk., root-rot.

P. lunatus, civet bean, and P. lunatus macrocarpus, Lima bean.

Bacterium phaseoli EFS. (Phytomonas phaseoli (EFS.) Com. S. A. B.), leaf-spot. Occurs scatteringly throughout Eastern States. B. viridifaciens W. B. Tisdale and M. M. Williamson, bacterial leaf-spot.

N. Y., Ind., Wis.

Cercospora cruenta Sacc., leaf-spot. N. Y., Miss., Mo., Tex.

C. phaseolorum Cke., leaf-spot. La.

Colletotrichum lindemuthianum (Sacc. and Magn.) Briosi and Cav. (Glomerella lindemuthiana Shear), anthracnose. Conn., N. Y., Pa., W. Va., La.,

Corticium vagum Berk. and Curt., stem-rot. Pa., Calif.

Diaporthe phaseolorum (Cke. and Ell.) Sacc., pod-blight. Widespread in eastern United States.

Erysiphe polygoni DC., powdery mildew. Conn., Calif.
Fusarium sp., root-rot. Ohio, Calif.
F. martii phaseoli Burk., dry root-rot. N. Y.
Heterodera radicicola (Greef) Muell., root-knot. Calif.
Nematospora phaseoli S. A. Wingard, yeast-spot. Va., Tenn., Ala., Ill. Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), rootrot. Tex.

Phyllosticta phaseolina Sacc., leaf-spot. N. J., W. Va., Fla., Ind., Mich. Phytophthora phaseoli Thax., downy mildew. Atlantic Coast States; W. Va., Ky., Ohio, Calif.

Sclerotinia sp., stem-rot. Ind.

Uromyces appendiculatus (Pers.) Lk., rust. Pa., Md., Va., Ohio, S. C., La., Calif.

Mosaic, undet. W. Va., Ga., Ind., Mo.

P. vulgaris, bean.

Alternaria fasciculata (Cke. and Ell.) L. R. Jones and A. J. Grout, leaf-spot. La., Mich., Ill., N. Dak., Utah.

Bacillus lathyri Manns and Taub., streak. Del.

Bacterium flaccumfaciens Hedges (Phytomonas flaccumfaciens (Hedges)
Com. S. A. B.), bacterial wilt. Md., Va., Mich., S. Dak., Mont., Oreg.

B. phaseoli EFS. (Phytomonas phaseoli (EFS.) Com. S. A. B.), blight. General.

B. solanacearum EFS. (Phytomonas solanaceara (EFS.) Com. S. A. B.),

bacterial wilt. Fla.

Botrytis cinerea Auct., gray-mold rot. N. Y., Miss., Tex. Cercospora cruenta Sacc., leaf-blotch. Fla., Ga. Colletotrichum caulicolum Heald and Wolf, stem canker.

C. lindemuthianum (Sacc. and Magn.) Briosi and Cav. (Glomerella linde-

muthiana Shear), anthracnose. General.
Corticium vagum Berk. and Curt., stem-rot. General.
Erysiphe polygoni DC., powdery mildew. Widespread. Fusarium martii phaseoli Burk., dry root-rot. General.

Heterodera radicicola (Greef) Muell., root-knot. Southern States; Calif. Isariopsis griseola Sacc., angular leaf-spot. Atlantic Coast States; Fla.,

Microsphaera diffusa Cke. and Pk., powdery mildew. Ga.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), rootrot. Okla., Tex.

Phoma sp., stem-rot. Ohio, Ark.

Phyllosticta phaseolina Sacc., leaf-spot. Conn., N. Y., N. J., Va., W. Va., Ind., Miss., La., Tex.

Pythium debaryanum Hesse, damping-off. Del., N. J., Ohio.

Sclerotinia sclerotiorum (Lib.) Mass., stem-rot. Middle Atlantic and Gulf

States; W. Va., Mich., Ind.

Sclerotium rolfsii Sacc., stem-rot. Southern States.

Thielavia basicola (Berk. and Br.) Zopf, black root-rot. N. H., N. Y.

Uromyces appendiculatus (Pers.) Lk., rust. General.

Mosaic, undet. General.

PHILADELPHUS.

Philadelphus spp., *syringa, mockorange.

Cercospora angulata Wint., leaf-spot. Mo.

Gymnosporangium gracilens (Pk.) Kern and Bethel, rust. Colo., Utah, N. Mex.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Mont.

Ramularia philadelphi Sacc., leaf-spot. Wash. Septoria philadelphi Ell. and Ev., leaf-spot. Wash.

PHLEUM.

P. pratense, timothy.

Cercospora graminicola Tr. and Earle, leaf-spot. Miss.
Claviceps microcephala (Wallr.) Tul., ergot. Ind., Ky., Alaska.
C. purpurea (Fr.) Tul., ergot. Vt., Pa., Ind., Minn.
Colletotrichum graminicolum (Ces.) Wils., anthracnose. Pa., Ohio, Ind., Minn.

Entyloma crastophilum Sacc., smut. Ill., Wis., Iowa.
Erysiphe graminis DC., powdery mildew. Minn.
Heterosporium phlei C. T. Gregory, leaf-spot. N. Y., Pa.
Ophiobolus graminis Sacc., take-all. N. Y.
Puccinia coronata Cda., crown-rust. Iowa.

P. graminis Pers., stem-rust. General. Scolecotrichum graminis Fckl., leaf-spot. Widespread in Northern States.

Septoria sp., leaf-spot. Pa., Ill. Sporotrichum poae Pk., silver top. N. Y., Ind., Iowa. *Ustilago striaeformis* (West.) Niessl, stripe-smut. General.

PHLOX.

Phlox spp., phlox.

Ascochyta phlogis phlogina Fairman, leaf-spot. Mass.

Bacterium tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and

Town.) Com. S. A. B.), crown-gall. N. J. Cercospora amphakodes Ell. and Hals., leaf-spot. Ind., Wis., Iowa.

Cercospora amphakodes Ell. and Hais, lear-spot. Ind., Wis., Jones.
C. phlogina Pk., leaf-spot. Va., Minn.
Erysiphe cichoracearum DC., powdery mildew. General.
Heterodera radicicola (Greef) Muell., root-knot. Mass.
Leptosphaeria phlogis Oud., leaf-spot. Md., Ind., Minn., Iowa, Nebr.
Phyllactinia corylea (Pers.) Karst., powdery mildew. Ohio.
Puccinia douglasii Ell. and Ev., rust. N. J., Pa., Nebr., Western States.
P. plumbaria Pk., rust. Ill., Iowa, Nebr., Western States.
Septoria divaricata Ell. and Ev., leaf-spot. N. Y., Va., Ill.
Selevatium ralfsii Sacc. stem-rot. Ill.

Sclerotium rolfsii Sacc., stem-rot. Ill.

Sphaerotheca humuli (DC.) Burr., powdery mildew. Ohio, Kans.

Tylenchus dipsaci (Kuehn) Bast., stem nematode. N. J.

Uromyces polemonii (Pk.) Arth., rust. S. C., Miss., Ind., Ill., Wis., Iowa.

PHOENIX.

P. canariensis, Canary Island date palm.

Exosporium palmivorum Sacc., leaf-spot. La., Tex. Graphiola phoenicis (Moug.) Poit., false smut. Fla., La., Miss., Tex., Calif.;

in hothouses in North.

P. dactylifera, date palm.

Exosporium palmivorum Sacc., leaf-spot. La. Graphiola phoenicis (Moug.) Poit., false smut. Fla., Tex., Ariz., Calif.

P. reclinata. Senegal date palm.

Graphiola phoenicis (Moug.) Poit., false smut. S. C.

PHOTINIA.

P. arbutifolia, Christmasberry.

Cercospora heteromeles Hark., leaf-spot.

Fabraea maculata (Lév.) Atk., leaf-spot. Calif.
Fusicladium photinicola R. L. McClain, scab. Calif. Phyllosticta heteromeles Cke. and Hark., leaf-spot. Calif.

Septoria photiniae Berk. and Curt., leaf-spot. Calif.

PHYLLOSTACHYS.

Phyllostachys sp., bamboo.

Cylindrosporium bambusae Miyake and Hara.

Melanconium bambusae Turconi. Schirrhia bambusae Turconi.

P. bambusoides, Japanese timber bamboo.

Coniosporium shiraianum (Syd.) Bub. Puccinia arundinariae Schw., rust.

P. melanocephala Syd., rust. Ga., Fla.

Ustilago shiraiana P. Henn., smut. Fla., La., Calif.

P. nigra, blackjoint bamboo.

Ustilago shiraiana P. Henn., smut. Fla., La., Calif.

PHYSOCARPUS.

P. opulifolius, ninebark.

Gloeosporium neilliae Hark., anthracnose. Calif. Marssonia lonicerae Hark., leaf-spot. Wis.

M. neilliae Hark., leaf-spot. Calif.
Ramularia ulmariae Cke., leaf-spot. N. Y.
Sphaerotheca humuli (DC.) Burr., powdery mildew. Wis.

PICEA.

P. canadensis, white spruce.

Fomes pinicola Fr., brown crumbly rot. N. Y. F. roseus (Alb. and Schw.) Fr., brown pocket rot. Melampsoropsis pyrolae (DC.) Arth., rust. Me.

Pythium debaryanum Hesse, damping-off.

Razoumofskya pusilla (Pk.) O. Kuntze, mistletoe. Northeastern States. Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot. Vt., N. Y.

P. engelmanni, Engelmann spruce.

Chrysomyxa weirii Jack., rust. Mont., Idaho, Oreg. Corticium vagum Berk. and Curt., damping-off. D. C., Calif.

Echinodontium tinctorium Ell. and Ev., brown stringy rot. Mont., Idaho, N. Mex.

Fomes officinalis (L.) Fr., reddish brown rot.

F. pinicola Fr., brown crumbly rot. Mont.
F. roseus (Alb. and Schw.) Fr., brown pocket rot.
Herpotrichia nigra Hartig, matting. Colo., Wyo., Idaho, Oreg.
H. quinqueseptata Weir, brown felt-blight. Idaho.
Hydnum sp., honeycomb rot.
Melampsorella elatina (Alb. and Schw.) Arth., rust. Idaho.

Melampsoropsis ledicola (Pk.) Arth., rust. Colo.

M. pyrolae (DC.) Arth., rust. Mont.

Peridermium coloradense (Diet.) Arth. and Kern, rust witches'-broom.
Northern Rocky Mts.; Pacific Northwest.

Polyporus dryadeus (Pers.) Fr., heart-rot. Pacific Northwest.

P. schweinitzii Fr., red-brown butt-rot.

P. sulphureus (Bull.) Fr., brown-checked wood-rot.

Pythium debaryanum Hesse, damping-off.

Razoumofskya douglasii microcarpa Engelm., mistletoe. Idaho, Colo., Mont., Ariz., N. Mex.

R. laricis Piper, mistletoe. Mont.

Sparassis radicata Weir, yellow root-rot. Mont., Pacific Northwest.

Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot. Mont., Idaho.

P. excelsa, Norway spruce.

Mont., Wyo. Melampsorella elatina (Alb. and Schw.) Arth., rust.

P. mariana, black spruce, and P. rubra, red spruce.

Fomes annosus Fr., white spongy rot. M. F. pinicola Fr., brown crumbly rot. Me.

Melampsoropsis abietina (Alb. and Schw.) Arth., leaf blister rust. N. H., Mich.

Mich., Minn. M. cassandrae (Pk. and Clint.) Arth., leaf blister rust.

M. ledicola (Pk.) Arth., leaf blister rust. Me., Minn. Polyporus borealis Fr., cuboidal wood-rot. Minn.

58433—26†——6

PICEA—Continued.

P. mariana, black spruce, and P. rubra, red spruce—Continued.

P. schweinitzii Fr., red-brown butt-rot. Minn.

Razoumofskya pusilla (Pk.) O. Kuntze, witches'-broom. New England, N. Y., Mich.

Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot. Me., Minn.

P. sitchensis, Sitka spruce.

Fomes officinalis Fr., reddish brown-rot. Wash.

F. pinicola Fr., brown crumbly rot. General within range of host.

F. roseus (Alb. and Schw.) Fr., brown pocket rot. General within range of host.

Lophodermium pinastri (Schrad.) Chev., needle cast. Alaska.

Melampsoropsis ledicola (Pk.) Arth., leaf blister rust. Wash., Alaska.

Polyporus berkeleyi Fr., string and ray rot. Calif. P. schweinitzii Fr., red-brown butt-rot. Oreg.

Pythium debaryanum Hesse, damping-off.

Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot. Oreg.

PINUS.

P. albicaulis, whitebark pine.

Fomes pinicola Fr., brown crumbly rot. General within range of host.

Neopeckia coulteri (Pk.) Sacc., brown felt-blight. Idaho, Calif.

Polyporus schweinitzii Fr., red-brown butt-rot.

Razoumofskya cyanocarpa (A. Nelson) P. A. Rydberg, mistletoe. Idaho,

R. laricis Piper, mistletoe. · Mont.

P. attenuata, knobcone pine.

Cronartium cerebrum (Pk.) Hedge. and Long, oak-rust. Calif.

C. coleosporioides (Diet. and Holw.) Arth., rust. Calif.

Fomes pinicola Fr., brown crumbly rot. General within range of host.

Razoumofskya americana (Nutt.) O. Kuntze, mistletoe. Oreg. R. campylopoda (Engelm.) Piper, mistletoe. Pacific coast.

P. banksiana, jack pine.

Coleosporium helianthi (Schw.) Arth., rust. Mich.

Corticium vagum Berk. and Curt., damping-off. Nebr. Cronartium cerebrum (Pk.) Hedge. and Long, oak-rust. Conn., Mich., Minn.

Cronartium cerebrum (Pk.) Heage. and Long, C. comptoniae Arth., rust. Conn., Wis., Minn. C. pyriforme (Pk.) Hedge. and Long, rust. Minn. Pavis. needle cast. Wis.

Lophodermium amplum Davis, needle cast. Wis. L. pinastri (Schrad.) Chev., needle cast. Wis., Minn.

Polyporus schweinitzii Fr., red-brown butt-rot. Minn.

Puthium debaryanum Hesse, damping-off. Razoumofskya americana Nutt., mistletoe.

P. caribaea, slash pine.

Coleosporium apocynaceum Cke., rust. Fla.

C. carneum (Bosc) Jack., rust. Ga., Fla.

C. delicatulum (Arth. and Kern) Hedge. and Long, rust. Fla., La.

C. elephantopodis (Schw.) Thuem., rust. Fla. C. ipomoeae (Schw.) Burr., rust. Fla.

Cronartium strobilinum (Arth.) Hedge. and G. Hahn, rust. Fla.

P. contorta, shore pine, and P. murrayana, lodgepole pine.

Cenangium piniphilum Weir, canker. Idaho. Coleosporium solidaginis (Schw.) Thuem., rust. Colo., Mont., Idaho, Oreg., Wash.

Cronartium coleosporioides (Diet. and Holw.) Arth., rust. Colo., S. Dak., Mont., Idaho, Wyo., Wash., Calif. C. cerebrum (Pk.) Hedge. and Long, oak-rust. Wyo., Utah, Idaho.

C. comptoniae Arth., rust. Mich.

C. filamentosum (Pk.) Hedge., pine-gall rust. Pacific Northwest.

C. harknessii (Moore) E. P. Meinecke, western pine-gall rust. Pacific coast; Idaho, Mont. C. pyriforme (Pk.) Hedge, and Long, rust. Mich., Colo., Mont., Wyo.,

Idaho.

P. contorta, shore pine, and P. murrayana, lodgepole pine—Continued.

Fomes pinicola Fr., brown crumbly rot. Mont., Idaho.
F. roseus (Alb. and Schw.) Fr., brown pocket rot. General in range of host. Hypoderma deformans Weir, needle cast, witches'-broom. Oreg., Calif.

H. lineare (Pk.) Thuem., needle cast. Colo.

Hypodermella montivaga (Petr.) Dearn., needle cast. Idaho, Oreg.

Lophodermium pinastri (Schrad.) Chev., needle cast. Colo., Alaska.

Neopeckia coulteri (Pk.) Sacc., brown felt-blight. Colo., Utah, Idaho,

Wash., Oreg.

Peridermium betheli Hedge. and Long, rust. Colo. Polyporus schweinitzii Fr., red-brown butt-rot. Idaho.

P. sulphureus (Bull.) Fr., brown-checked wood-rot.

Razoumofskya americana Nutt., mistletoe. Rocky Mt. region: Pacific Northwest; eastern Calif.

Rhizina inflata (Schaeff.) Sacc., seedling blight. Mont.
Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot.
Mont., Idaho.

P. echinata, shortleaf pine.

Coleosporium carneum (Bosc) Jack., rust. Southeastern States.

Coleosporium carneum (Bose) Jack., rust. Southeastern States.
C. delicatulum (Arth. and Kern) Hedge. and Long, rust. Pa., Md., S. C., Ga.
C. elephantopodis (Schw.) Thuem., rust. Fla.
C. helianthi (Schw.) Arth., rust. Ga.
C. inconspicuum (Long) Hedge. and Long, rust. Md., N. C., Ga.
C. ipomoeae (Schw.) Burr., rust. Pa., Va., N. C., S. C., Tenn., Ga., Ala.,

Ark., Tex.

C. solidaginis (Schw.) Thuem., rust. Del., Miss.

C. terebinthinaceae (Schw.) Arth., rust. Southeastern States. Cronartium cerebrum (Pk.) Hedge. and Long, oak-rust. Ark. C. comptoniae Arth., sweet-fern rust. N. C.

C. strobilinum Arth., rust. Miss.

Fomes pinicola Fr., brown crumbly rot. General in host range. Lophodermium pinastri (Schrad.) Chev., needle cast. Ala.

Polyporus schweinitzii Fr., red-brown butt-rot.
Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot. Mo.

P. edulis, nut pine.

Coleosporium ribicola (Cke. and Ell.) Arth., rust. Colo., N. Mex. Cronartium occidentale Hedge., Bethel, and Hunt, piñon blister rust. Colo., N. Mex., Utah.

Fomes pinicola Fr., brown crumbly rot. General within host range.

Polyporus schweinitzii Fr., red-brown butt-rot. Razoumofskya divaricata (Engelm.) Coville, mistletoe. Colo., Utah, Calif Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot.

P. jeffreyi, Jeffrey pine.

Cronartium comptoniae Arth., sweet-fern rust.

C. filamentosum (Pk.) Hedge, and Long, rust. Oreg. C. harknessii (Moore) E. P. Meinecke, rust. Nev., Calif. Fomes pinicola Fr., brown crumbly rot. General with host. Polyporus schweinitzii Fr., red-brown butt-rot.

P. sulphureus (Bull.) Fr., brown-checked wood-rot. Razoumofskya americana Nutt., mistletoe. Calif. R. campylopoda (Engelm.) Piper, mistletoe. Calif.

P. lambertiana, sugar pine.

Armillaria mellea (Vahl) Quel., root-rot. Calif. Cronartium ribicola Fisch., blister rust. N. Y. Fomes officinalis Fr., reddish brown-rot. Calif.

F. pinicola Fr., brown crumbly rot. Calif. Lophodermium pinastri (Schrad.) Chev., needle cast. Oreg.

Polyporus schweinitzii Fr., red-brown butt-rot.

Razoumofskya cyanocarpa (A. Nelson) P. A. Rydberg, mistletoe. Oreg.,

Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), horevcomb rot. Calif.

P. monophylla, singleleaf pine.

Cronartium occidentale Hedge., Bethel, and Hunt, blister rust. Ariz., Calif. Fomes pinicola Fr., brown crumbly rot. General within host range. Polyporus schweinitzii Fr., red-brown butt-rot.
Razoumofskya divaricata (Engelm.) Coville, mistletoe. Ariz., Calif.

P. montana, Swiss mountain pine.

Cronartium comptoniae Arth., sweet-fern rust. N. H., Conn. Herpotrichia nigra Hartig, matting.

P. monticola, western white pine.

Cronartium ribicola Fisch., blister rust. Wash.

Dasyscypha fuscosanguinea Rehm, canker. Mont., Idaho, Wash. Fones officinalis Fr., reddish brown-rot. Idaho.

F. pinicola Fr., brown crumbly rot.

Hypoderma lineare (Pk.) Thuem., needle cast. Pacific Northwest. Lophodermium pinastri (Schrad.) Chev., needle cast. Wash., Idaho, Mont. Neopeckia coulteri (Pk.) Sacc., brown felt-blight. Calif.

Polyporus schweinitzii Fr., red-brown butt-rot. P. sulphureus (Bull.) Fr., brown-checked wood-rot.

Razoumofskya cyanocarpa (A. Nelson) P. A. Rydberg, mistletoe. (Rhizina inflata (Schaeff.) Sacc., seedling blight. Mont., Idaho. Scleroderris bacillifera (Karst.) Sacc., branch canker. Wash., Oreg.

Sparassis radicata Weir, yellow root-rot. Mont., Pacific Northwest. Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot.

P. nigra, Austrian pine and Corsican pine.

Coleosporium carneum (Bosc) Jack., rust. Ohio.

C. delicatulum (Arth. and Kern) Hedge, and Long, rust. Pa.

C. solidaginis (Schw.) Thuem., rust. Pa.

Corticium vagum Berk. and Curt., damping-off.

Cronartium comptoniae Arth., sweet-fern rust. Conn., Ohio.

C. pyriforme (Pk.) Hedge. and Long, rust. Conn.

Peridermium sp., leaf-rust. Ohio, Nebr. Pythium debaryanum Hesse, damping-off.

P. palustris, longleaf pine.

Coleosporium apocynaceum Cke., rust. Fla.

C. carneum (Bose) Jack., rust. S. C. to Miss.
C. delicatulum (Arth. and Kern) Hedge. and Long, rust. S. C., Ga., Fla., Miss.

C. elephantopodis (Schw.) Thuem., rust. N. C., S. C., Fla., Ala., Miss. C. inconspicuum (Long) Hedge. and Long, rust. S. C. C. ipomoeae (Schw.) Burr., rust. S. C., Fla., Miss. C. laciniariae Arth., rust. Ga., Fla.
C. terebinthinaceae (Schw.) Thuem., rust. S. C.

Cronartium cerebrum (Pk.) Hedge. and Long, oak-rust. Ga. C. fusiforme (Pk.) Hedge. and Hunt, rust. Tex.

C. fusiforme (Pk.) Hedge. and Hunt, rust. C. strobilinum Arth., pine-cone rust. Fla. Fomes pinicola Fr., brown crumbly rot.

Peridermium floridanum Hedge. and G. Hahn, rust. Fla.

Polyporus schweinitzii Fr., red-brown butt-rot. Septoria acicola (Thuem.) Sacc., leaf-spot. La.

Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot.

P. ponderosa, western yellow pine.

Botrytis cinerea Auct., gray-mold. Utah.

Cenangium abietis (Pers.) Rehm, twig-blight. N. Mex., Ariz., Mont.,

Idaho, Wash., Oreg.
C. piniphilum Weir, canker. Mont., Idaho, Wash.
Ceratostomella pilifera (Fr.) Wint., bluing. S. Dak.
Rosco Jack., rust. D. C., Ohio. Coleosporium carneum (Bosc) Jack., rust. I. C. delicatulum Arth. and Kern, rust. D. C. C. solidaginis (Schw.) Thuem., rust. Md.

C. solidaginis (Schw.) Thuem., rust. Md.
Corticium vagum Berk. and Curt., damping-off. Nebr.
Cronartium cerebrum (Pk.) Hedge. and Long, oak-rust. Pa., Wis., Nebr., Idaho.

P. ponderosa, western yellow pine—Continued.

C. comptoniae Arth., sweet-fern rust. Mass., N. H., Conn., Mich.
 C. filamentosum (Pk.) Hedge. and Long, rust. Colo., Mont., Ariz., Utah, Wash., Calif.

C. harknessii (Moore) E. P. Meinecke, rust. Idaho, Wash., Calif. C. pyriforme (Pk). Hedge. and Long, rust. Mont., Wyo., Colo., S. Dak., Ariz., Utah, Idaho; Pacific coast.

C. stalactiforme Arth., rust. Mont.

Fomes officinalis Fr., reddish brown-rot. S. Dak., Ariz., Wash.

F. pinicola Fr., brown crumbly rot. Western States.

F. roseus (Alb. and Schw.) Fr., brown pocket rot. General in host range Fusarium sp., damping-off. Vt., N. Y., N. J., Nebr. Hypoderma deformans Weir, needle cast. Pacific Northwest and Mont. General in host range.

Hypoderma deformans Weir, needle cast. Pacific Northwest and Mont.

Lentinus sp., red-brown heart-rot. Ariz.

Lophodermium pinastri (Schrad.) Chev., needle cast. Idaho, Oreg.

Neopeckia coulteri (Pk.) Sacc., brown felt-blight. Calif.

Pestalozzia sp., leaf-blight. N. Y., Nebr.

Polyporus ellisianus (Murr.) Long, red-rot. S. Dak., N. Mex., Ariz., Wash.

P. ponderosus Schrenk, red-rot. S. Dak.

P. schweinitzii Fr., red-brown butt-rot. Mont.

P. sulphureus (Bull.) Fr., brown-checked wood-rot.

Pathium debaranum Hesse demping off

Pythium debaryanum Hesse, damping-off.

Razoumofskya americana Nutt., mistletoe. Mont., Idaho, Oreg.

R. campylopoda (Engelm.) Piper, mistletoe. Northern Rocky Mt. States; Pacific Northwest.

R. cryptopoda (Engelm.) Coville, mistletoe. Rocky Mt. States. Rhizina inflata (Schaeff.) Sacc., seedling blight. Mont.

Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot. S. Dak., Mont., Oreg., Calif.

P. pungens, Table Mountain pine.

Coleosporium solidaginis (Schw.) Thuem., rust. Md.

Cronartium pyriforme (Pk.) Hedge. and Long, rust. Pa., Northwestern States.

P. radiata, Monterey pine.

Cronartium cerebrum (Pk.) Hedge, and Long, rust. Calif. Lophodermium pinastri (Schrad.) Chev., needle cast. Calif. Razoumofskya campylopoda (Engelm.) Piper, mistletoe. Calif.

P. resinosa, red pine.

Coleosporium delicatulum (Arth. and Kern) Hedge. and Long, rust. Vt. C. solidaginis (Schw.) Thuem., needle rust. N. H., Vt., N. Y., Pa., S. C., Minn.

Corticium vagum Berk. and Curt., damping-off. Conn., Mich., Minn.

Cronartium comptoniae Arth., sweet-fern rust. N. H.

Formes pinicola Fr., brown crumbly rot. General within range of host.

Fusoma parasiticum Tub., damping-off. Minn. Polyporus schweinitzu F1., 100 2000.

P. sulphureus Fr., brown-checked wood-rot. Min.

Hesse damping-off. Minn. Polyporus schweinitzii Fr., red-brown butt-rot.

Minn.

Pythium debaryanum Hesse, damping-off. Minn. Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot.

P. rigida, pitch pine.

Armillaria mellea (Vahl) Quel., root-rot. Pa.

Coleosporium campanulae (Pers.) Lév., rust. Ohio. C. carneum (Bosc) Jack., rust. Conn., Pa., D. C., Va., N. C., W. Va., Ohio, Ind.

C. delicatulum (Arth. and Kern) Hedge. and Long, rust. New England, south to N. C.

C. elephantopodis (Schw.) Thuem., rust. D. C., N. C. C. ipomoeae (Schw.) Burr., rust. Pa., Md., S. C., Ga.

C. laciniariae Arth., rust. N. J.

C. solidaginis (Schw.) Thuem., rust. Conn. to Md.

C. terebinthinaceae (Schw.) Arth., rust. N. C. Cronartium cerebrum (Pk.) Hedge. and Long, oak-rust. Mass., N. Y., N. J., Pa.

P. rigida, pitch pine—Continued.

C. comptoniae Arth., sweet-fern rust. New England, N. Y., Pa. C. pyriforme (Pk.) Hedge. and Long, rust. Vt., Conn., N. J., Northwestern States.

Fomes pinicola Fr., brown crumbly rot. General within range of host. Hypoderma brachysporum (Rostr.) Tub., needle cast. Mass. Lophodermium pinastri (Schrad.) Chev., needle cast. R. I., N. J. Pestalozzia funerea Desm., leaf-blight. Mass.

Polyporus schweinitzii Fr., red-brown butt-rot.
Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot.
Me., N. J., Ala., Ky.

P. sabiniana, digger pine.

Cronartium cerebrum (Pk.) Hedge. and Long, oak-rust. Calif. C. harknessii (Moore) E. P. Meinecke, rust. Calif.

Razoumofskya campylopoda (Engelm.) Piper, mistletoe.

P. serotina, pond pine.

Coleosporium carneum (Bosc) Jack., rust. S. C., Fla., Ga.

C. delicatulum (Arth. and Kern) Hedge, and Long, rust. N. J., S. C., Ga.,

C. elephantopodis (Schw.) Thuem., rust.

C. ipomoeae (Schw.) Burr., rust. S. C. C. solidaginis (Schw.) Thuem., rust. N. C., S. C.

C. terebinthinaceae (Schw.) Arth., rust. S. C.

P. strobus, white pine.

Armillaria mellea (Vahl) Quel., root-rot. Pa.
Cenangium abietis (Pers.) Rehm, canker. Ohio.
Coccomyces pini (Alb. and Schw.) Karst., bark-blight. Ga.

Corticium vagum Berk. and Curt., damping-off. Conn., Mass., N. Y.,

Cronartium cerebrum (Pk.) Hedge. and Long, oak-rust.

C. ribicola Fisch., blister rust. Me. to Minn., south to N. J. and Pa.

Cytospora sp. Pa.

Fomes roseus (Alb. and Schw.) Fr., brown pocket rot. General in host

Fusarium sp., damping-off. Vt., N. Y., Iowa. Fusoma parasiticum Tub., damping-off. Minn.

Hendersonia foliicola (Berk.) Fekl., leaf-spot. Mass.

Hypoderma lineare (Pk.) Thuem., needle cast. N. Y., Pa. H. strobicola Tub., needle cast. New England, Pa., N. C.

Lophodermium pinastri (Schrad.) Chev., needle cast. New England, Pa.,

Nectria cucurbitula Fr., canker. Vt., Pa.

Pestalozzia sp., leaf-blight. Vt., Mass., N. Y.

Phoma harknessii Sacc., canker. Conn., Mass., N. Y.

Minn.

Polyporus berkeleyi Fr., string and ray rot. P. ellisianus (Murr.) Long, red-rot. Vt.

P. schweinitzii Fr., red-brown butt-rot. Me. Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot. N. H., Pa., N. C., Minn.

P. sylvestris, Scotch pine.

Coleosporium sonchi-arvensis (Pers.) Lév., rust.

Corticium vagum Berk. and Curt., damping-off. Conn.

Cronartium cerebrum (Pk.) Hedge. and Long, oak-rust.

C. comptoniae Arth., rust. N. H., Mass., N. Y., Ohio.

C. pyriforme (Pk.) Hedge. and Long, rust. Conn.

Cytospora pinastri Fr., needle blight. Pa. Fusoma parasiticum Tub., damping-off.

Minn.

Pestalozzia sp., leaf-blight. Vt., Nebr.
Phytophthora cactorum (Leb. and Cohn) Schroet., damping-off. Minn.
Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot. N. J.

P. taeda, loblolly pine.

Coleosporium apocynaceum Cke., rust. Fla.

C. carneum (Bosc) Jack., rust. Southeastern States, N. J., Ark.

C. delicatulum (Arth. and Kern) Hedge. and Long, rust. Va., N. C., S. C.,

C. elephantopodis (Schw.) Thuem., rust. South Atlantic and Gulf States. C. ipomoeae (Schw.) Burr., rust. Southeastern States. C. laciniariae Arth., rust. Fla.

C. pini Gall., rust. Md.
C. solidaginis (Schw.) Thuem., rust. Southeastern States.
C. terebinthinaceae (Schw.) Arth., rust. S. C., Ala.
Cronartium cerebrum (Pk.) Hedge. and Long, oak-rust. Fla., Ala., Miss.,

C. comptoniae Arth., sweet-fern rust. N. J., Ga. C. pyriforme (Pk.) Hedge, and Long, rust. N. J. Fomes annosus Fr., white spongy rot. New England. F. pinicola Fr., brown crumbly rot. Lophodermium pinastri (Schrad.) Chev., needle cast.

Peridermium minutum Hedge. and Hunt, rust.

Polyporus schweinitzii Fr., red-brown butt-rot. Septoria acicola (Thuem.) Sacc., leaf-spot. Fla.

Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot.

P. virginiana, scrub pine.

Coleosporium helianthi (Schw.) Arth., rust. Pa. to Ga. C. inconspicuum (Long) Hedge. and Long, rust. Md. C. pini Gall., rust. Middle Atlantic States, Tenn. Md. to Ga.

Cronartium cerebrum (Pk.) Hedge. and Long, oak-rust. Pa. to Ala.

C. comptoniae Arth., sweet-fern rust.

Fomes pinicola Fr., brown crumbly rot. F. roseus (Alb. and Schw.) Fr., brown pocket rot.

Lophodermium pinastri (Schrad.) Chev., needle cast.

Polyporus schweinitzii Fr., red-brown butt-rot.
Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot. Md., Ga.

PISUM.

P. sativum, pea.

Aphanomyces euteiches Drechs., root-rot. Conn., N. Y., Pa., N. J., Del., Md., Ohio, Ind., Ill., Mich., Wis., Mont., Utah, Idaho, Calif. Bacillus lathyri Manns and Taub., bacterial streak. Del. Bacterium pisi (W. G. Sackett) EFS. (Phytomonas pisi (Sack.) Com. S. A. B.),

bacterial blight. N. Y., Pa., Del., Md., S. C., Fla., Ill., Ind., Mich., Wis., N. Dak., Colo., Mont., Oreg.

Colletotrichum pisi Pat., anthracnose. Wis.

Widespread. Corticium vagum Berk. and Curt., stem-rot.

Erysiphe polygoni DC., powdery mildew. General. Fusarium martii minus Sherb., stem-rot. Widespread.

F. martii pisi F. R. Jones, root-rot. Widespread.

Heterodera radicicola (Greef) Muell., root-rot. Southern States, Calif. Isariopsis griseola Sacc., leaf-spot. R. I. Mycosphaerella pinodes (Berk. and Blox.) R. E. Stone (Ascochyta pisi Lib.),

blight. General.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), Tex. root-rot.

Peronospora viciae (Berk.) D By., downy mildew. N. Y., Pa., Del., Md.,

Tenn., Wis., Iowa, Kans., Oreg., Calif.

Phytophthora cactorum (Leb. and Cohn) Schroet., blight. Pythium spp., root-rot. Conn., Del., Ill., Mich., Wis., Mont. Sclerotinia sclerotiorum (Lib.) Mass., stem-rot. Pa., Del., Fla. Septoria flagellifera Ell. and Ev., leaf-spot. Wis., S. Dak.

S. pisi West., leaf-spot. North of Ohio and Missouri Rivers; Tex., Mont., Colo., Calif.

Thielavia basicola (Berk. and Br.) Zopf, black root-rot. Conn., N. Y., Pa., Md., Ark.

Uromyces fabae (Pers.) D By., rust. Minn., N. Dak., Nebr.

PLATANUS.

Platanus sp., *sycamore, planetree.

Armillaria mellea (Vahl) Quel., root-rot. Md., W. Va. Cercospora platanicola Ell. and Ev., leaf-spot. Ga., La.

Gnomonia veneta (Sacc. and Speg.) Kleb., anthracnose.

Microsphaera alni (Wallr.) Wint., powdery mildew. East of Great Plains. Phleospora multimaculans Heald and Wolf, leaf-blight. Tex.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Calif.

Phyllosticta platani Sacc. and Speg., leaf-spot. Ala., Kans.
Septoria platanifolia Cke., leaf-spot. Md., S. C.
Stigmina platani (Fckl.) Sacc., leaf-spot. W. Va., Ga., Miss., Okla., Ark., Ind., Ill., Mo., Calif.

POA.

P. compressa, Canada bluegrass.

Erysiphe graminis DC., powdery mildew. Ophiobolus graminis Sacc., take-all. N. Y.

Puccinia coronata Cda., crown-rust. Mo., Kans.

P. epiphylla Wetts., rust. Minn., Colo.

P. graminis Pers., stem-rust. Pa., Ind., Mich. Scolecotrichum graminis Fckl., leaf-spot. Wis., Minn., Nebr.

P. pratensis, Kentucky bluegrass.

Claviceps microcephala (Wallr.) Karst., ergot. Ind.

C. purpurea (Fr.) Tul., ergot. Ky., Ill., Minn. Colletotrichum graminicolum (Ces.) Wils., anthracnose. Ohio, Ind., Minn.

Corticium vagum Berk. and Curt., brown-patch. General.

Entyloma irregulare Johans., smut. Ill., Minn. Epichloe typhina (Pers.) Tul. Del.

Erysiphe graminis DC., powdery mildew. General, especially east of Great Plains.

Helminthosporium vagans Drechs., leaf-spot. New England, N. Y., Pa., Md.,

Phyllachora graminis (Pers.) Fckl., tar-spot. Nebr. Puccinia glumarum (Schm.) Eriks. and Henn., stripe-rust.

P. epiphylla Wetts., rust. General.

P. triticina Eriks., leaf-rust.

Sclerotium sp., damping-off.

Scolecotrichum graminis Fekl. Pa., Ind., Minn. Septoria sp., leaf-blotch. Pa., Ind., Wis., Minn. Uromyces poae Rabh., rust. Ind.

Ustilago striaeformis (West.) Niessl, stripe-smut. General.

POINCIANA.

P. regia, royal poinciana.

Gloeosporium sp., anthracnose.

Populus spp., poplar, cottonwood, aspen.

Bacterium tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall. Conn., N. J., Minn., Kans., Wyo., Utah.

Cercospora populina Ell. and Ev., leaf-spot. Ala., La. Cladosporium subsessile Ell. and Barth., leaf-spot. Wis. Cytospora chrysosperma (Pers.) Fr., canker. General.

Dimerosporium populi Ell. and Ev., sooty mold. Mont. Dothichiza populea Sacc. and H. Briard, canker. General east of Great Plains.

Fomes applanatus (Pers.) Wallr. (Ganoderma applanatum (Pers.) Pat.), white-streaked rot. Conn., Minn., N. Dak., S. Dak., N. Mex. F. everhartii (Ell. and Gall.) Schrenk, white-rot. Mont.

F. termaturius (Li.) Fr., white sapwood rot. Minn.
F. igniarius (L.) Fr., white heart-rot. General.
Hypoxylon pruinatum (Klotzsch) Cke., canker. Me., N. Y., Mich.
Marssonia brunnea (Ell. and Ev.) Sacc., anthracnose. N. J., Wis., Wash.
M. curvata Bub. and Kab., leaf-spot. Utah.
M. populi (Lib.) Magn., leaf-spot. Wis.

POPULUS-Continued.

Populus spp., poplar, cottonwood, aspen—Continued.

M. rhabdospora (Ell. and Ev.) Magn., leaf-spot. N. J., Wis. Melampsora abietis-canadensis (Farl.) F. Ludwig, rust. General.

M. albertensis Arth., rust. Western States.
M. larici-populina Kleb., rust. General.

M. medusae Thuem., rust. General. M. occidentalis Jack., rust. Western States; Wis.

Napicladium tremulae (Frank) Sacc., twig-blight. Minn.
Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-rot. Tex.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Southwest. P. flavescens macrophyllum Engelm., mistletoe. N. Mex., Ariz.

Phyllosticta alcides Sacc., leaf-spot. Ohio, Idaho. P. brunnea Dearn. and Barth., leaf-spot. Mont., Colo., Ariz.

P. brunnea Dearn. and Barth., leaf-spot. Mont., Colo., Ariz.
P. intermixta Seaver, leaf-spot. Kans.
P. maculans Ell. and Ev., leaf-spot. N. Y., Kans.
Polyporus dryadeus (Pers.) Fr., white root-rot.
P. dryophilus Berk., white pocket heartwood rot. Me., N. H., Wis., Colo.
Rhytisma nervale (Alb. and Schw.) Rehm, tar-spot. N. Y.
Sclerotium bifrons Ell. and Ev., leaf-spot. New England and Adirondack region; Wis., Wyo., Colo., Utah, Oreg.
Septoria musiva Pk., leaf-spot. Widespread.
S. populicola Pk., leaf-spot. Nebr., Tex.
Stereum purpureum Fr., silver-leaf. Wash.
Taphrina aurea (Pers.) Fr., yellow leaf blister. Me., Mass., N. Y., N. J.,
Iowa: Pacific coast.

Iowa: Pacific coast.

Trochila popularum Desm., leaf-spot. Widespread. Uncinula salicis (DC.) Wint., powdery mildew. General. Venturia tremulae Aderh., scab. Me., Wash.

PRIMULA.

Primula sp., primrose.

Botrytis cinerea Auct., gray-mold. Conn., S. C., Ohio. Heterodera radicicola (Greef) Muell., root-knot. Conn., W. Va. Ramularia primulae Thuem., leaf-spot. Conn., N. Y., Del. Mosaic, undet. Pa. (greenhouse).

PROSOPIS.

Prosopis sp., prairie mesquite.

Cercospora prosopidis Heald and Wolf, leaf-blight. Tex. Erysiphe sp., powdery mildew. Tex. Gloeosporium leguminum Cke., pod-spov, and Calif. Neoravenelia holwayi (Diet.) Long, rust. Tex., Calif. Neoravenelia holwayi (Diet.) Long, rust. Tex., Calif. P. flavescens (Pursh) Nutt., mistletoe. Tex.
P. flavescens macrophyllum Engelm., mistletoe. Ariz., N. Mex.
Phyllosticta julifora Ell. and Barth., leaf-spot. Tex.

Ravenelia arizonica Ell. and Ev., rust. Tex., Ariz., Calif.

PRUNUS.

Prunus sp., cherries (sweet and sour).

Armillaria mellea (Vahl) Quel., root-rot. Ohio, Mich., Ark., Pacific coast. Bacillus amylovorus(Burr.) Trev. (Erwinia amylovora (Burr.) Com. S. A. B.), blight. Ohio, Mich., Kans., N. Mex., Wash. Bacterium cerasi F. L. Griffin, bacterial gummosis. Okla., Ind., Mich.,

Idaho; Pacific coast.

B. pruni EFS. (Phytomonas pruni (EFS.) Com. S. A. B.), bacterial spot.

N. Y., Ala., Okla., Ill.

B. tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.)

Com. S. A. B.), crown-gall. Mass., N. Y., Okla., Ohio, N. Mex., Colo.; Pacific Northwest.

Cercospora cerasella Sacc., leaf-spot. Ga., Fla., Ala., Miss.

C. circumscissa Sacc., shot-hole. Widespread. C. rosicola Pass., leaf-spot. Oreg.

Prunus sp., cherries (sweet and sour)—Continued.

Cladosporium carpophilum Thuem., scab. Me., N. H., N. Y., Mich., Iowa, Oreg.

Clitocybe parasitica E. M. Wilcox, root-rot, Ark.

Coccomyces hiemalis Hig., leaf-spot. General.

Coryneum beijerinckii Oud., blight. Pacific coast, Idaho, Utah.

Exoascus cerasi (Fckl.) Sadeb., witches'-broom. North Atlantic Coast States; Tenn., Pacific coast.

E. pruni Fckl., pockets. Minn.

Fomes applanatus (Pers.) Wallr. (Ganoderma applanatum (Pers.) Pat.), white-streaked rot. N. Y.

Phyllosticta prunicola Sacc., leaf-spot. Wis., Minn.

Plowrightia morbosa (Schw.) Sacc., black-knot. East of Great Plains. Podosphaera oxyacanthae (Fr.) D By., powdery mildew. General. Polyporus sulphureus (Bull.) Fr., brown-checked wood-rot.

Schizophyllum commune Fr., sap-rot. Ohio, Minn., Nebr. Sclerotinia fructicola (Wint.) Rehm (S. americana (Wormald) Norton and

Ezekiel), brown-rot. General. Stereum purpureum Fr., associated with silver-leaf. N. Y., Minn., Oreg. Transschelia punctata (Pers.) Arth., rust. Miss., Mich., Nebr., Calif. Valsa leucostoma (Pers.) Fr., die-back. Ohio, Mo. Venturia cerasi Aderh., scab. Ind.

P. avium, sweet cherry.

Alternaria sp., fruit-rot. Mich., Idaho.

A. citri cerasi B. A. Rudolph, leaf-spot. Calif.

Armillaria mellea (Vahl) Quel., root-rot. Pacific coast.

Bacillus amylovorus (Burr.) Trev. (Erwinia amylovora (Burr.) Com. S. A. Wash. B.), blight.

Bacterium cerasi F. L. Griffin, bacterial gummosis. Oreg., Calif. B. pruni EFS. (Phytomonas pruni (EFS.) Com. S. A. B.), bacterial spot. N. Y., Mich.

Cercospora cerasella Sacc., leaf-spot. Ga., Ala.
C. circumscissa Sacc., shot-hole. N. J., Pa., Ohio.
Coccomyces hiemalis Hig., leaf-spot. N. Y., Pa., Md., Wash., Oreg.
Coryneum beijerinckii Oud., blight. Pacific Northwest.

Exoascus cerasi (Fckl.) Sadeb., witches'-broom. N. Y., Wash., Oreg., Alaska.

E. communis Sadeb., pockets. Iowa.

E. pruni Fckl., pockets. Okla.

Physalospora malorum (Pk.) Shear (P. cydoniae Am. Auct.) black-rot. East of Rocky Mts.

Plowrightia morbosa (Schw.) Sacc., black-knot. N. Y., Mich.

Podosphaera oxyacanthae (DC.) D By., powdery mildew. N. Y., Md., Iowa, Wash.

Polyporus lacteus Fr., heart-rot. Oreg.

Sclerotinia cinerea (Bon.) Schroet. (Monilia oregonensis Barss and Posey), blossom blight. Pacific coast.

S. fructicola (Wint.) Rehm (S. americana (Wormald) Norton and Ezekiel), brown-rot. General.

Tranzschelia punctata (Pers.) Arth., rust. Okla.

P. cerasus, sour cherry.

Alternaria sp., fruit-rot. Mich.

Bacterium pruni EFS. (Phytomonas pruni (EFS.) Com. S. A. B.), bacterial spot. N. Y.

Cercospora cerasella Sacc., leaf-spot. Ala.

Coccomyces hiemalis Hig., leaf-spot. General east of Great Plains and north of Ky. and Va.

Exoascus cerasi (Fckl.) Sadeb., witches'-broom. Md., Wis.

E. communis Sadeb., pockets. Iowa. Phyllosticta prunicola Sacc., leaf-spot.

Podosphaera oxyacanthae (DC.) D By., powdery mildew. General.

Plowrightia morbosa (Schw.) Sacc., black-knot. N. Y., Pa., Md., Va., W. Va., N. C.

Sclerotinia fructicola (Wint.) Rehm (S. americana (Wormald) Norton and Ezekiel), brown-rot. N. J., Ind.

P. besseyi, P. cuneata, P. pumila, sand cherry.

Bacterium tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall. Minn.

Exoascus communis Sadeb., pockets. N. Y., Wis., N. Dak., S. Dak., Kans. Plowrightia morbosa (Schw.) Sacc., black-knot. N. Dak., Podosphaera oxyacanthae (DC.) D By., powdery mildew. Iowa, N. Dak.,

S. Dak., Nebr. Sclerotinia cinerea (Bon.) Schroet. (Monilia oregonensis Barss and Posey), blossom blight. Wash., Oreg.

S. fructicola (Wint.) Rehm (S. americana (Wormald) Norton and Ezekiel), brown-rot. Minn., Nebr. Tranzschelia punctata (Pers.) Arth., rust. Nebr., Kans.

P. pennsylvanica, pin cherry.

Coccomyces hiemalis Hig., leaf-spot. N. Y., W. Va. Exoascus cerasi (Fckl.) Sadeb., witches'-broom. N. Phyllosticta congesta Heald and Wolf, leaf-spot, Wis. Physalospora malorum (Pk.) Shear (P. cydoniae Am. Auct.), black-rot. Plowrightia morbosa (Schw.) Sacc., black-knot. Me., W. Va., Minn. Podosphaera oxyacanthae (DC.) D By., powdery mildew. Ill. Tranzschelia punctata (Pers.) Arth., rust. Ill.

P. serotina, wild black cherry.

Coccomyces hiemalis Hig., leaf-spot. Widespread east of Great Plains. C. lutescens Hig., leaf-blight. N. Y., Pa., Ga., Miss., Ill. Exoascus cerasi (Fckl.) Sadeb., witches'-broom. Mass., Ala. E. farlowii Sadeb., leaf-curl. Ala. E. pruni Fckl., pockets. Va., Ala. E. varius Atk., leaf deformation. Del., Fla., Ala. Frames famentarius (L.) Franchisto composed ref

Fomes fomentarius (L.) Fr., white sapwood rot.

Gloeosporium serotinum Ell. and Ev., leaf-spot. D.

Phoradendron flavescens (Pursh) Nutt., mistletoe.

Phyllosticta prunicola Sacc., leaf-spot. N. Y., Wis.

P. serotina Cke., leaf-spot. Widespread east of Great Plains.

P. virginiana (Ell. and Hals.) Seaver, leaf-spot. Iowa, Kans.

Plowrightia morbosa (Schw.) Sacc., black-knot. Widespread east of Miss.

River. Podosphaera oxyacanthae (DC.) D By., powdery mildew. N. Y., Ill. Sclerotinia fructicola (Wint.) Rehm (S. americana (Wormald) Norton and

Ezekiel), brown-rot. S. C.
S. seaveri Rehm. N. Y., Pa., Del., Md., Va., W. Va., Ga., Wis., Iowa.
Septoria cerasina Pk., leaf-spot. Mass.
S. ravenelii Thuem., leaf-spot. Pa., N. J., S. C., Ill.

Tranzschelia punctata (Pers.) Arth., rust. S. C., Ala., Tex., Ind., Ill., Iowa, Mo.

Valsa leucostoma (Pers.) Fr., die-back. N. Y.

P. virginiana, P. demissa, chokecherry.

Bacterium pruni EFS. (Phytomonas pruni (EFS.) Com. S. A. B.), bacterial spot. N. Y.

Cercospora cerasella Sacc., leaf-spot. Kans. C. circumscissa Sacc., shot-hole. N. Dak., Kans.

Coccomyces hiemalis Hig., leaf-spot. Widespread in northern United States. C. lutescens Hig., leaf-blight. N. Y., Wash.

Cylindrosporium tubeufianum Allesch., leaf-spot. N. Y. Cytospora chrysosperma (Pers.) Fr., canker. Mont.

Exoascus cerasi (Fckl.) Sadeb., witches'-broom. Nebr., Colo.

E. confusus Atk., fruit deformation. Mass. E. farlowii (Sadeb.) Sacc., leaf-curl. Wash.
E. pruni Fekl., pockets. N. Dak., Wash.
Gloeosporium prunicolum Ell. and Ev., leaf-spot. Wis.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Wash.
Phyllosticta circumscissa Cke., leaf-spot. Kans., Wash.
P. prunicola Sacc., leaf-spot. N. Y.
P. virginiana (Ell. and Hals.) Seaver, leaf-spot. Wis., Iowa, Kans., Mont. Physalospora malorum (Pk.) Shear (P. cydoniae Am. Auct.), black-rot.

PRUNUS—Continued.

P. virginiana, P. demissa, chokecherry—Continued.

Plowrightia morbosa (Schw.) Sacc., black-knot. Widespread in Northern States.

Podosphaera oxyacanthae (DC.) D By., powdery mildew. Widespread in Northern States.

Sclerotinia angustior Rehm. N. Y., Pa., Iowa, N. Dak. S. demissa B. F. Dana, blight. Idaho, Wash. S. fructicola (Wint.) Rehm (S. americana (Wormald) Norton and Ezekiel), brown-rot. Conn., Fla., Kans.

Septogloeum nuttallii Hark., leaf-spot. Oreg.

Tranzschelia punctata (Pers.) Arth., rust. S. C., Mich., Ill.

P. armeniaca, apricot.

Armillaria mellea (Vahl) Quel., root-rot. Calif.

Bacillus amylovorus (Burr.) Trev. (Erwinia amylovora (Burr.) Com. S. A. B.),

blight. Pa., Tex., Nebr., Colo.

Bacterium cerasi F. L. Griffin, bacterial gummosis. Calif.

B. pruni EFS. (Phytomonas pruni (EFS.) Com. S. A. B.), bacterial spot.

Ill., Nebr.

B. tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall. Colo., Ariz., Idaho, Pacific coast. Botrytis cinerea Auct., fruit-rot. Calif.

Cercospora circumscissa Sacc., shot-hole. Tex., Calif.
Cladosporium carpophilum Thuem., scab. Widespread.
Coccomyces sp., leaf-spot. Mass., Tex.
Coryneum beijerinckii Oud., blight. Utah, Idaho, Pacific coast.
Heterodera radicicola (Greef) Muell., root-knot. Ariz.

Monilia sp., blossom blight. Calif. Monochaelia rosenwaldia A. Khazanoff, tumor. Calif.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-

Phyllosticta circumscissa Cke., shot-hole. Calif.

Plowrightia morbosa (Schw.) Sacc., black-knot. N. Y., Colo.

Sclerotinia cinerea (Bon.) Schroet. (Monilia oregonensis Barss and Posey), blossom blight. Wash., Oreg.

S. fructicola (Wint.) Rehm (S. americana (Wormald) Norton and Ezekiel), brown-rot. Mass., Conn., N. Y., Md., Ohio, Ind., Ill., Tex., Okla., Colo., Pacific coast.
S. sclerotiorum (Lib.) Mass., green-rot.
Septoria cerasina Pk., leaf-spot. Calif.
Tranzschelia punctata (Pers.) Arth., rust.
Valsa leucostoma (Pers.) Fr., twig-blight.
Verticillium sp., wilt. Calif.

Miss., Tex., Calif.

Tex.

P. domestica (in part), prune.

Armillaria mellea (Vahl) Quel., root-rot. Pacific coast.

Bacillus amylovorus (Burr.) Trev. (Erwinia amylovora (Burr.) Com. S. A. B.), blight. Pacific Northwest.

Bacterium cerasi F. L. Griffin, bacterial gummosis. Pacific coast.

B. pruni EFS. (Phytomonas pruni (EFS.) Com. S. A. B.), bacterial spot. N. Y., Pa.

B. tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall. Pacific Northwest; Calif.

Com. S. A. B.), crown-gail. Pacine Northwest; Calif. Cercospora circumscissa Sacc., shot-hole. Wash. Cladosporium carpophilum Thuem., seab. Ohio, Nebr., Pacific Northwest. Coccomyces prunophorae Hig., leaf-spot. N. Y., Del., Nebr., Pacific coast. Coryneum beijerinckii Oud., blight. Wash., Oreg. Exoascus pruni (Berk.) Fckl., pockets. Nebr. Plowrightia morbosa (Schw.) Sacc., black-knot. Mich., Nebr. Sclerotinia cinerea (Bon.) Schroet. (Monilia oregonensis Barss and Posey), blossom blight. Wash., Oreg.
S. fructicola (Wint.) Rehm (S. americana (Wormald) Norton and Ezekiel), brown-rot. Widespread.

brown-rot. Widespread.

Tranzschelia punctata (Pers.) Arth., rust. Nebr., Kans., Tex., Oreg., Calif.

Prunus spp., plum.

Armillaria mellea (Vahl) Quel., root-rot. Minn., N. Dak., Tex., Calif. Bacillus amylovorus (Burr.) Trev. (Erwinia amylovora (Burr.) Com. S. A. B.), blight. Vt., N. J., Pa., Miss., Tex., Ohio, Mich., S. Dak., Nebr., Colo., Ariz., Wash.

Bacterium cerasi F. L. Griffin, bacterial gummosis. Tex., Kans., Ariz., Calif. B. pruni EFS. (Phytomonas pruni (EFS.) Com. S. A. B.), bacterial spot.

General east of Great Plains.

B. tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall. Occurs in widely scattered States. Botrytis cinerea Auct., fruit-rot. Wash.

Cercospora circumscissa Sacc., shot-hole. N. Y., Kans., Wash.

Cladosporium carpophilum Thuem., scab. Widespread. Coccomyces prunophorae Hig., leaf-spot. General.

Coryneum beijerinckii Oud., blight. Pacific coast, Idaho.
Diplodia pruni Fekl., twig-blight. Fla.

Exoascus communis Sadeb., pockets. Iowa.

E. mirabilis Atk., hypertrophy. Widespread east of Great Plains.

E. pruni (Berk.) Fekl., pockets. General.

Fomes fulvus Fr., brown heartwood rot. Minn., Nebr.

F. pinicola Fr., brown crumbly rot. Oreg.

Heterodera radicicola (Greef) Muell., root-knot. S. C.

Lasiodiplodia triflorae Hig., wilt. Md., Va., Ga.

Lenzites saepiaria Fr., dry-rot. Oreg.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-rot. Ariz.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Phyllosticta circumscissa Cke., shot-hole. N. J., Ga., Wash.

P. congesta Heald and Wolf, blotch. Ga., Tex.

P. prunicola Sacc., leaf-spot. Minn.

Plowrightia morbosa (Schw.) Sacc., black-knot. General except Pacific coast.

Podosphaera oxyacanthae (DC.) D By., powdery mildew. Widespread east of Great Plains.

Polyporus lacteus Fr., heart-rot. Va., Ind., Wash., Oreg.
Polystigma rubrum (Pers.) DC., red leaf-spot.
Pythiacystis citrophthora E. H. and R. E. Smith, brown-rot. Calif.
Schizophyllum commune Fr., sap-rot. Minn., Nebr.
Sclerotinia fructicola (Wint.) Rehm (S. americana (Wormald) Norton and Ezekiel), brown-rot. General.

Septobasidium sp., canker. Fla.
S. retiforme (Berk. and Curt.) Pat., canker. Ala., Fla.
Septoria cerasina Pk., leaf-spot. Mass.
Trametes carnea (Nees) Cke., wood-rot. Oreg.
Tranzschelia punctata (Pers.) Arth., rust. Widespread.

Valsa leucostoma (Pers.) Fr., die-back. Pa., S. C., Tex., Ohio, Mo., Colo., Idaho.

P. americana, American wild plum.

Cercospora circumscissa Sacc., shot-hole. Nebr. Cercospora circumscissa Sacc., snot-noie. Neor.
C. prunicola Ell. and Ev., leaf-spot. Ala., La.
Cladosporium carpophilum Thuem., scab. Wis., Iowa, Calif.
Coccomyces prunophorae Hig., shot-hole. Ind., S. Dak.
Exoascus cerasi (Fckl.) Sadeb., witches'-broom. Ill., Iowa.
E. communis Sadeb., pockets. General over range of host.
E. decipiens Atk., leaf-curl. Mont.
E. mirabilis Atk., hypertrophy. Miss.

Emirabilis Atk., hypertrophy. Miss.

E. pruni Fckl., pockets. N. Dak., Iowa, Miss.

Fomes fulvus Fr., brown heartwood rot. Ohio, Ind., N. Dak., S. Dak., Nebr., Kans.

Phyllosticta circumscissa Cke., leaf-spot. Ill.

P. virginiana (Ell. and Hals.) Seaver, leaf-spot. Kans. Plowrightia morbosa (Schw.) Sacc., black-knot. General over range of host. Podosphaera oxyacanthae (DC.) D By., powdery mildew. General over range of host.

Sclerotinia fructicola (Wint.) Rehm (S. americana (Wormald) Norton and Ezekiel), brown-rot. N. Y., Va., Miss., Iowa.

PRUNUS—Continued.

P. americana. American wild plum—Continued.

Septoria pruni Ell., leaf-spot. Ky., Kans. S. purpureocincta Ell. and Ev., leaf-spot. Kans. Tranzschelia punctata (Pers.) Arth., rust. General over range of host.

PSEUDOTSUGA.

P. douglasii, Douglas fir.

Botrytis cinerea Auct., gray-mold twig-blight. Conn. Corticium vagum Berk. and Curt., damping-off. Colo.

Echinodontium tinctorium Ell. and Ev., brown stringy rot. Utah, Mont. Idaho.

Fomes officinalis Fr., reddish brown-rot. Mont.

F. pinicola Fr., brown crumbly rot. Western States.

F. roseus (Alb. and Schw.) Fr., brown pocket rot. Ariz., Wash. Melampsora albertensis Arth., rust. Mont., Colo., Utah, Wash.

Phacidium infestans Karst., needle blight. Idaho.

Polyporus schweinitzii Fr., red-brown butt-rot. Mont., Idaho, Wash., Oreg. P. sulphureus (Bull.) Fr., brown-checked wood-rot. Idaho, Wash. Pythium debaryanum Hesse, damping-off.

Razoumofskya douglasii (Engelm.) O. Kuntze, mistletoe. Colo., Pacific Northwest.

Rhabdocline pseudotsugae Syd., needle cast. Oreg.
Sparassis radicata Weir, yellow root-rot. Mont., Pacific Northwest.
Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycon.b rot.
Mont., Wyo., Idaho, Wash.

PSIDIUM.

P. quajava, guava.

Clitocybe monadelpha (Morgan) Sacc., root-rot. Fla.

Colletotrichum sp., die-back. Fla.

Glomerella cingulata (Ston.) Spauld. and Schrenk, ripe-rot. Fla.

PTELEA.

P. trifoliata, hoptree.

Cercospora afflata Wint., leaf-spot. Mo.

C. pteleae Wint., leaf-spot. Ind., Mo.
Phleospora pteleae Tharp. Utah.
Puccinia windsoriae Schw., rust. Scatteringly throughout range of host. Septoria pteleae Ell. and Ev., leaf-spot. Ind.

PUNICA.

P. granatum, pomegranate.

Cercospora lythracearum Heald and Wolf, leaf-spot. Tex.

Heterodera radicicola (Greef) Muell., root-knot.

Sterigmatocystis castanea F. Patterson, fruit-rot. Tex., Ariz., Calif.

PYRACANTHA.

P. coccinea, scarlet firethorn.

Bacillus amylovorus (Burr.) Trev. (Erwinia amylovora (Burr.) Com. S. A. B.), blight. Idaho, Wash.

PYRUS.

P. communis, pear.

Armillaria mellea (Vahl) Quel., root-rot. Pacific coast.

Bacillus amylovorus (Burr.) Trev. (Erwinia amylovora (Burr.) Com. S. A. B.), blight. General.

Bacterium tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall. General.

Botryosphaeria ribis Gross, and Dug., black-rot.

Botrytis sp., spur-blight. Oreg.

B. cinerea Auct., fruit-rot. Wash.

Cephalothecium roseum Cda., pink-mold rot. Conn., R. I., Ill. Cercospora minima Tr. and Earle, leaf-spot. Miss., Tex.

C. piri Farl., leaf-spot. Mich.

Corticium stevensii Burt (Hypochnus ochroleucus F. Noack), leaf-blight. W. Va., N. C., S. C., Ga., Fla., Ala., Tex.

PYRUS-Continued.

P. communis, pear—Continued.

Coryneum foliicolum Fckl., leaf-spot. Ind.

Fabraea maculata (Lév.) Átk., leaf-blight. General.

Gloeodes pomigena (Schw.) A. S. Colby (Phyllachora pomigena (Schw.) Sacc.), sooty blotch. Mass. to N. C., westward to Ill., Tex.

Gloeosporium perennans Zeller and Childs, perennial canker. Wash., Oreg. Glomerella cingulata (Ston.) Spauld. and Schrenk, bitter-rot. Conn., Mass., N. J., S. C., Ga., Tex., Ark.

Gymnosporangium blasdaleanum (Diet. and Holw.) Kern, incense-cedar Oreg.

G. globosum Farl., rust. Conn., N. Y., Ohio, Colo. G. nelsoni Arth., rust. Colo.

G. nelsoni Arth., rust. Colo.

Hendersonia foliorum Fckl., leaf-spot. Tex.

Leptothyrium carpophilum Pass., flyspeck. Tex.

Mycosphaerella sentina (Fr.) Schroet., leaf-spot. General east of Great Plains; Oreg.

Myxosporium corticolum Edg. (Dermatea corticola (Edg.) Arn.), surface bark canker. N. Y., Mich., Oreg.

Nectria galligena Bres., European canker. Oreg.

Neofabraea malicorticis (A. B. Cordley) Jack., anthracnose. Wash., Oreg.

Nummularia discreta (Schw.) Tul., blister canker. Del.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.),

root-rot. Tex., N. Mex., Ariz.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Tex.

P. flavescens macrophyllum Engelm., mistletoe. Ariz., N. Mex.

Phyllosticta pyrorum Cke., leaf-spot. S. C., Ill.

Physalospora malorum (Pk.) Shear (P. cydoniae Am. Auct.), black-rot.

Widespread east of Great Plains; Oreg.

Phytophthora cactorum (Leb. and Cohn) Schroet., rot. Conn., Ind., Mich.

Podosphaera leucotricha (Ell. and Ev.) Salm., powdery mildew. Colo.,

Week

P. oxyacanthae (DC.) D By., powdery mildew. Colo. Pythiacystis citrophthora E. H. and R. E. Smith, citrus brown-rot. Calif. Sclerotinia cinerea (Bon.) Schroet. (Monilia oregonensis Barss and Posey), blossom blight. Pacific coast.

S. fructicola (Wint.) Rehm (S. americana (Wormald) Norton and Ezekiel), brown-rot. Conn., Pa., Del., S. C., Ga., Fla., Miss., Ind., Ill., Wash. Septoria nigerina Fckl., leaf-spot. N. Y.

Yenturia pyrina Aderh., scab. General. Xylaria sp., root-rot. Ind. Bitter-pit, undet. N. Y., Wash., Oreg. Brown-blotch, undet. N. J. Chlorosis, nonpar. Tex., N. Mex., Wash.

Measles, undet. Fla.

QUERCUS.

Quercus spp., oaks.

Actinopelte japonica Sacc., leaf-spot. N. J.

Armillaria mellea (Vahl) Quel., root-rot. Widespread.

Cercospora polytricha Cke., leaf-spot. S. C., Ga. Cronartium cerebrum (Pk.) Hedge. and Long, rust. East of Great Plains; Calif.

C. fusiforme (Pk.) Hedge. and Hunt, rust.

C. stroblinum (Arth.) Hedge. and Hahn, rust. Fla.
Cylindrosporium microspilum Sacc. and Wint., leaf-spot. Mo.
Cytospora chrysosperma (Pers.) Fr., canker. R. I., N. J., Pa.
Diplodia longispora Cke. and Ell., twig-blight. Conn., N. Y., N. J., Pa., Md.,
Va., W. Va.

Fomes applanatus Fr. (Ganoderma applanatum (Pers.) Pat.), white-streaked rot. Me., N. H., Pa., Ky., Minn., Calif. F. everhartii (Ell. and Gall.) Schrenk, white-rot. Conn., N. J., Pa., N. C.,

Ohio, Ind., Minn., Mont.

F. fomentarius (L.) Fr., white sapwood rot.
F. igniarius (L.) Fr., white heart-rot. Conn., Mass., N. C., Minn., Okla. F. lobatus Schw., spongy white-rot. Ark.

QUERCUS-Continued.

Quercus spp., oaks—Continued.

Gnomonia veneta (Sacc. and Speg.) Kleb., anthracnose. East of Great Plains.

Hydnum erinaceus Fr., wet heartwood rot. Ala., Ind., Ark.

Leptothyrium dryinum Sacc., leaf-spot. N. J., Va., Ga., Miss., Tex., Wis.

Marssonia martini (Sacc. and Ell.) Magn., leaf-spot. Miss. Valley; Pa., Va.

M. quercus Pk., leaf-spot. Ind., Mo., Tex.

Microsphaera alni (Wallr.) Wint., powdery mildew. General east of Great Plains; Wash., Calif.

Monochaetia desmazierii Sacc., large leaf-spot. Pa., Southeastern States. Nectria cinnabarina Fr., canker. Mass., Pa., Ala.

N. galligena Bres., European canker. Oreg.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-Tex. rot.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Tex., Ind., Ariz.

P. villosum Nutt., mistletoe. Oreg.

Phyllactinia corylea (Pers.) Karst., powdery mildew. East of Miss. River.

Phyllosticta agrifolia Ell. and Ev., leaf-spot. Calif. P. livida Ell. and Ev., leaf-spot. Fla., La., Wis., Calif. P. ludoviciana Ell. and Mart., leaf-spot. Fla., La.

P. phomiformis Sacc., leaf-spot. Occurs scatteringly east of Great Plains.
P. quercus Sacc. and Speg., leaf-spot. N. Y., Ind., Wis.
P. quercus prini Ell. and Ev., leaf-spot. W. Va.

P. vesicatoria Thuem., leaf-spot. S. C. P. wislizeni Ell. and Ev., leaf-spot. Calif.

Polyporus berkeleyi Fr., string-rot and ray-rot. N. Y., Pa., N. C., Ala., Ark., Ind., Mo.

P. croceus Fr., white-piped rot. N. Y., N. C., Ark., Ohio, Ind. P. dryadeus Fr., white wood-rot. Pa., Va., Tex., Okla., Ark., Ohio, Ind., Minn.

P. frondosus Fr., straw-colored rot. Mass., Va., Ark., Ind. P. obtusus Berk., soft heartwood rot. Tenn., Ga., Ala., Minn.

P. rheades Fr., white pocket rot. General.

P. spraguei Berk., heart-rot. General.

P. sulphureus (Bull.) Fr., brown-checked wood-rot. Ger Rhytisma erythrosporum Berk. and Curt., tar-spot. Tex. Septoria dryina Cke., leaf-spot. Mass., S. C., Kans.

S. neglecta Earle, leaf-spot. Ala.

Sphaeropsis quercina Cke. and Ell., twig canker. Pa.

Sphaerotheca lanestris Hark., powdery mildew. Ala., Miss., Ind., Ill., Iowa, Calif.

Stereum subpileatum Berk. and Curt., honeycomb heart-rot. Southern States; Ohio, Ky., Mo.

Strumella coryneoidea Sacc. and Wint., canker. Conn., Mass., N. Y., Pa., Ill., Mo., Oreg.

Taphrina coerulescens (Mont. and Desm.) Tul., leaf blister. General east of Great Plains.

RADICULA.

R. armoracia, horseradish.

Albugo candida (Pers.) O. Kuntze, white-rust. Mass. to Mont., south to Kans.

Alternaria brassicae (Berk.) Sacc., leaf-spot. Nebr., Mo.

A. herculea (Ell. and Mart.) J. A. Elliott, gray leaf-spot. Conn., N. J.,

Bacillus sp., bacterial root-rot. N. J.

Cercospora armoraciae Sacc., leaf-spot. Northern States. Corticium vagum Berk. and Curt., stem-rot. N. J., Mich., Ill., Wash.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-rot. Tex.

Phyllosticta decidua Ell. and Kell., leaf-spot.

P. orbicula Ell. and Ev., leaf-spot. N. Y.

Ramularia armoraciae Fckl., leaf-spot. General. Thielavia basicola (Berk. and Br.) Zopf, black root-rot. N. J.

RAPHANUS.

R. sativus, radish.

Actinomyces scabies (Thax.) Gues., scab. Ohio, Ind. Albugo candida (Pers.) O. Kuntze, white-rust. Gene Alternaria brassicae macrospora Sacc., leaf-spot. Conn.

Ascochyta sp., leaf-spot. Mass.
Bacillus carotovorus L. R. Jones (Erwinia carotovora (Jones) Com. S. A. B.), soft-rot. N. Y.

Bacterium campestre (Pam.) EFS. (Phytomonas campestre (Pam.) Com. S. A. B.) black-rot. Ohio.

Cercospora cruciferarum Ell. and Ev., leaf-spot. Ala.

Corticium vagum Berk. and Curt., stem-rot. Mass., N. Y., Del., Ohio, Ill., Wash.

Erysiphe polygoni DC., powdery mildew. Tex., Mo.

Peronospora parasitica (Pers.) D By., downy mildew. Widespread. Plasmodiophora brassicae Wor., clubroot. Conn., N. Y., Pa., Minn.

Puccinia sarcobati (Pk.) Bethel, rust. Southwestern States.

Pythium aphanidermatum (Edson) Fitz., black-root. Widely scattered States east of Miss. River.

P. debaryanum Hesse, damping-off. Va., Minn. Sclerotinia sclerotiorum (Lib.) Mass., stem-rot. Minn.

RESEDA.

R. odorata, mignonette.

Cercospora resedue Fckl., leaf-spot. Widespread east of Great Plains. Corticium vagum Berk. and Curt., stem-rot. Conn. Fusarium sp., root-rot, N. Y.

RHAMNUS.

R. cathartica, buckthorn.

Cercospora rhamni Fckl., leaf-spot. N. J. Puccinia coronata Cda., crown-rust. Vt., N. Y., Ill., Wis., Minn., Iowa, N. Dak., S. Dak.

R. purshiana, cascara buckthorn.

Cylindrosporium rhamni Ell. and Ev., leaf-spot. Idaho. Marssonia rhamni Ell. and Ev., leaf-spot. Was Phyllosticta rhamnigena Sacc., leaf-spot. Wash. Puccinia coronata Cda., crown-rust. Pacific Northwest; Mont. Septoria blasdalei Sacc. and Syd., leaf-spot. Calif.

RHEUM.

R. rhaponticum, rhubarb.

Ascochyta rhei Ell. and Ev., leaf-spot. General east of Rocky Mts. Bacillus carotovorus L. R. Jones (Erwinia carotovora (Jones) Com. S. A. B.), soft-rot. Ohio.

Colletotrichum erumpens Sacc., anthracnose. Pa., W. Va., Ill. Corticium vagum Berk. and Curt., stem-rot. N. Y., Ill., Wash.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), rootrot.

Peronospora rumicis Cda., downy mildew. Calif. Phyllosticta straminella Bres., leaf-spot. N. Y., Pa., Ind., Ill., Minn., Mo., N. Dak., Nebr.

Phytophthora sp., crown-rot. N. J., Pa., Del., Tenn., Ill., Mich., Mo. P. cactorum (Leb. and Cohn) Schroet., crown-rot. Pa.

P. parasitica rhei G. H. Godfrey, foot-rot. Md., D. C., Va., Kans. Puccinia rubella (Pers.) Arth., rust. Nebr. Sclerotium rolfsii Sacc., stem-rot. Va.

RHODODENDRON.

Rhododendron sp., rhododendron.

Armiliaria mellea (Vahl) Quel., root-rot. Wash.

Coccomyces rhododendri (Schw.) Sacc., leaf-spot. W. Va. (on R. maximum).

Coryneum rhododendri Schw., leaf-spot. Wash., Oreg. (on R. californicum).

Cryptostictis sp., leaf-spot. Pacific coast. Exobasidium vaccinii (Fckl.) Wor., hypertrophy. Pa., N. C., Fla., Ind.,

Iowa, Wash., Oreg.

RHODODENDRON—Continued.

Rhododendron sp., rhododendron—Continued.

Hendersonia concentrica Ell. and Ev., leaf-spot. N. C.
Laestadia rhodorae Berl. and Vogl., leaf-spot. N. Y.
Melampsoropsis piperiana Arth., rust. Oreg., Wash. (on R. californicum).
M. roanensis Arth., rust. Tenn.
Pestalozzia funerea Desm., leaf-spot. Va.

P. guepini Desm., leaf-spot. Conn., N. Y., N. J., Pa., Del., Ind., Wash. Phyllosticta maxima Ell. and Ev., leaf-spot. Conn., N. Y., N. J. P. saccardoi Thuem., leaf-spot. N. Y. Septoria rhododendri Cke., leaf-spot. Me.

Sporocybe azaleae (Pk.) Sacc., bud-blight. Pacific coast.

Witches'-broom and white-leaf, undet. Pacific coast (on R. californicum).

RHODORA.

R. canadense, rhodora.

Exobasidium vaccinii (Fckl.) Wor., hypertrophy. N. H. Pucciniastrum myrtilli (Schum.) Arth., rust. N. H.

RHODOTYPOS.

R. kerrioides, jetbead.

Ascochyta rhodotypi H. W. Anderson, leaf-spot. Ill.

R. copallina, shining sumac.

Cercospora copallina Cke., leaf-spot. S. C., Fla., La. C. rhoina Cke. and Ell., leaf-spot. Widespread east of Great Plains.

Cylindrosporium toxicodendri Ell. and Ev., leaf-spot. N. J.

Exoascus purpurascens (Ell. and Ev.) Sadeb., leaf-curl. Mass., N. J., Ga. Sphaerotheca humuli (DC.) Burr., powdery mildew. Ill., Mo.

R. cotinus, smoketree.

Cercospora rhoina Cke. and Ell., leaf-spot. Ala.

Septoria rhoina Berk. and Curt., leaf-spot. New England, N. Y.

R. glabra, smooth sumac.

Cercospora rhoina Cke. and Ell., leaf-spot. Va. to Nebr. and southward.

Cladosporium aromaticum Ell. and Ev. Nebr.

Septoria rhoina Berk. and Curt., leaf-spot. Ill., Minn., Kans. Sphaerotheca humuli (DC.) Burr., powdery mildew. Iowa, Miss.

R. tuphina, staghorn sumac.

N.Y.

Cercospora rhoina Cke. and Ell., leaf-spot. Md.

Exoascus purpurascens (Ell. and Ev.) Sadeb., leaf-curl. Md.

Physalospora malorum (Pk.) Shear (P. cydoniae Am. Auct.), canker.

Septoria rhoina Berk. and Curt., leaf-spot. Miss., Iowa.

Sphaerotheca humuli (DC.) Burr., powdery mildew. Pa.

RIBES.

R. nigrum, European black currant.

Cronartium ribicola Fisch., blister rust. New England, N. Y., Wash., Oreg. Microsphaera grossulariae (Wallr.) Lév., powdery mildew. Mont.

Mycosphaerella grossulariae (Fr.) Lindau, leaf-spot. Conn., Iowa.

Pseudopeziza ribis Kleb., anthracnose. N. H.

Puccinia grossulariae (Schum.) Lagh., rust. Conn.

R. vulgare, red current, white current.

Botryosphaeria ribis Gross. and Dug., cane-blight. Mass., Conn., N. Y. to

Va., west to Ill.

Cercospora angulata Wint., leaf-spot. N. Y. to Va., west to Iowa and Kans. Cronartium ribicola Fisch., blister rust. North Atlantic States; Mich.,

Fomes ribis (Schum.) Fr., root-rot. N. Y., N. J., Ind., Utah. Glomerella cingulata (Ston.) Spauld. and Schrenk, bitter-rot.

Mycosphaerella grossulariae (Fr.) Lindau, leaf-spot. General in Northern States.

Nectria ditissima Tul., canker. N. Y.

Phyllosticta grossulariae Sacc., leaf-spot.

Plasmopara ribicola Schroet., downy mildew.

RIBES-Continued.

R. vulgare, red current, white current—Continued.

Pleonectria berolinensis Sacc., doubtfully parasitic on canes. Conn., Mass., Md., Ohio, Mich., Ind., N. Dak., Utah.

Pseudopeziza ribis Kleb., anthracnose. Widespread in Northern States. Puccinia grossulariae (Schum.) Lagh., rust. Mass., Conn., N. Y., Mich.,

Ind., Minn., N. Dak., Iowa.

Sphaerotheca mors-uvae (Schw.) Berk. and Curt., powdery mildew. Widespread in Northern States.

*R. grossulariae and other species, gooseberry.

Armillaria mellea (Vahl) Quel., root-rot.

Botrytis cinerea Auct., die-back. Wash., Oreg.
Cercospora sp., leaf-spot. N. Y., W. Va., Ind., Mich., Mo., Nebr.
Coleosporium ribicola (Cke. and Ell.) Arth., rust. Wyo., Colo., N. Mex.
Cronartium occidentale Hedge., Bethel, and Hunt, piñon blister rust. Colo., Ariz., Calif.

Ind., Mo.

C. ribicola Fisch., blister rust. New England, Minn. Leptosphaeria coniothyrium (Fckl.) Sacc., cane-blight. Mycosphaerella grossulariae (Fr.) Lindau, leaf-spot. General in Northern

Phyllactinia corylea (Pers.) Karst., powdery mildew. N. Y.
Phyllosticta grossulariae Sacc., leaf-spot. N. J., Wis., Wash.
Plasmopara ribicola Schroet., downy mildew. W. Va., Minn., Oreg.

Pseudopeziza ribis Kleb., anthracnose. General in Northern States. Puccinia grossulariae (Schum.) Lagh., rust. New England to N. Dak., south to Kans. and Md.

Ramularia sp., leaf-spot. Mich.

Septoria grossulariae (Lib.) West., leaf-spot. Me., Nebr., Kans.

Sphaerotheca mors-uvae (Schw.) Berk. and Curt., powdery mildew. General.

RICINUS.

R. communis, castor-bean.

Bacterium solanacearum EFS. (Phytomonas solanaceara (EFS.) Com. S. A.

B.), bacterial wilt. Ga., Fla., Ala.

Botytis cinerea Auct., gray-mold. Fla.

Cercospora albido-maculans Wint., leaf-spot. Mo.

C. ricinella Sacc. and Berl., leaf-spot. Gulf States, Calif.

Corticium vagum Berk. and Curt., damping-off. Fla., Kans.

Heterosporium sp. Calif.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-

Sclerotinia ricini G. H. Godfrey, gray-mold. Fla., Miss., La., Tex.

ROBINIA.

R. pseudacacia, black locust.

Cylindrosporium solitarium Heald and Wolf, leaf-spot.

Fomes rimosus Berk., yellow wood-rot. Widespread east of Great Plains. F. robiniae Murr., spongy heart-rot. Miss. Valley and Eastern States. Gloeosporium revolutum Ell. and Ev., leaf-spot. N. J.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-Tex. rot.

Phoradendron flavescens macrophyllum Engelm., mistletoe. Ariz., N. Mex.

Polyporus obtusus Berk., soft heartwood rot. P. sulphureus (Bull.) Fr., brown-checked wood-rot. Mass.

Septoria curvata (Rabh. and A. Braun) Sacc., leaf-spot. Ohio.

Trametes robiniophila Murr., white heart-rot. Mich.

ROSA.

Rosa spp., rose (cultivated and wild species).

Armillaria mellea (Vahl) Quel., root-rot. Oreg.

Bacterium tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall. Widespread.

Botryosphaeria ribis Gross. and Dug., cane-blight. Md., Va. Botrytis cinerea Auct., bud-blight. General. Cercospora rosicola Pass., leaf-spot. General east of Great Plains; Wash. C. rosigena Tharp, leaf-spot. Tex.

ROSA—Continued.

Rosa spp., rose (cultivated and wild species)—Continued.

Cladosporium fuscum Lk., leaf-spot. Miss., Minn.

Coniothyrium rosarum Cke. and Hark., graft canker. N. J., Iowa.

Coryneum sp., stem canker. Wash. C. microstictum Berk. and Br., canker.

Pa.

Cylindrocladium scoparium Morgan, crown canker. Mass., N. Y., Pa., Ga., Ind., Mich., Mo.

Diaporthe umbrina A. Jenkins, canker. Atlantic coast, W. Va., Ky., Miss. Dicoccum rosae Bon., blight, leaf-spot. Fla., Ind. Diplocarpon rosae Wolf, black-spot. General.

Diplodia sp., twig-blight. Fla.
Discosia artocreas (Tode) Fr., blossom blight. La.

Dothiorella sp., blossom blight. La.

Gloeosporium rosae Hals., twig-blight. Widespread east of Miss. River; Tex.,

Heterodera radicicola (Greef) Muell., root-knot. N. J., W. Va., Ala., Ohio, Mich., Nebr.

Leptosphaeria coniothyrium (Fckl.) Sacc., cane-blight. General. Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-

Peronospora sparsa Berk., downy mildew. N. Y., Pa., Ohio, Tex., Calif.

Phomopsis sp., canker. Ky.

Phragmidium americanum (Pk.) Diet., rust. Widespread in Northeastern

States; upper Miss. Valley.

P. disciflorum (Tode) G. F. James, rust. General.

P. montivagum Arth., rust. Western States.

P. rosae-acicularis Liro, rust. Mich., Wis., Minn., N. Dak., Mont., Idaho. Alaska.

P. rosae-arkansanae Diet., rust. Widespread. P. rosae-californicae Diet., rust. Pacific coast. P. rosae-setigerae Diet., rust. Upper Miss. Valley.

P. speciosum Cke., rust. General. P. subcorticinum (Schrank) Wint., rust. Widespread.

Phyllosticta rosae Desm., leaf-spot. Ind., Fla. Physalospora malorum (Pk.) Shear (P. cydoniae Am. Auct.), canker. Sclerotinia sp., blight. Miss. Septoria rosae Desm., leaf-spot. Miss.

Sphaerotheca humuli (DC.) Burr., powdery mildew. Conn., Pa., Tex., Ohio, Mich., Wis., Nebr., Calif. S. pannosa (Wallr.) Lév., powdery mildew. General.

Uromyces rosicola Ell. and Ev., rust. Nebr.

RUBUS.

Rubus sp., blackberry.

Armillaria mellea (Vahl) Quel., root-rot. Wash.

Bacterium tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall. General.

Botrytis cinerea Auct., gray-mold. General on harvested fruit.

Cercospora rubi Sacc., blotch. Fla., La., Ill.

Corticium vagum Berk. and Curt., crown-rot. Colo.

Cylindrosporium rubi Ell. and Morgan, leaf-spot. N. C.

Fusarium sp., rosette. Md., Gulf States.

Fusisporium rubi Wint., double-blossom. N. Y., N. J., Del., Md., Va., Tenn., south to Fla., Ala., La., Ill.

Gloeodes pomigena (Schw.) A. S. Colby (Phyllachora pomigena (Schw.) Sacc.), sooty blotch. Ind.

Gymnoconia interstitialis (Schl.) Lagh., orange rust. General, especially in Eastern States.

Kuehneola uredinis (Lk.) Arth., yellow rust. General east of Miss. River. Leptosphaeria coniothyrium (Fckl.) Sacc., cane-blight. East of Great Plains except Southern States; Pacific Northwest.

Leptothyrium pomi (Mont. and Fr.) Sacc., flyspeck. In Mycosphaerella rubi E. W. Roark, leaf-spot. General. M. rubina (Pk.) Jacz., spur-blight. N. Y., Wis., Minn.

M. rubina (Pk.) Jacz., spur-blight. N. Y., Wis., Minn. Peronospora rubi Rabh., downy mildew. Wis. Pezizella lythri (Desm.) Shear and B. O. Dodge, fruit-rot.

RUBUS-Continued.

Rubus sp., blackberry-Continued.

Phragmidium imitans Arth., leaf-rust. Wash.
Plectodiscella veneta (Speg.) Burk., anthracnose. General.
Sphaerotheca humuli (DC.) Burr., powdery mildew. Ohio, Ill., Minn.
Verticillium alboatrum Reinke and Berth., bluestem, wilt. N. Y., Minn.,

Dwarf, undet. Wash., Oreg. Mosaic, undet. N. Y., Ind., Iowa, Oreg., Calif.

Rubus sp., dewberry (cultivated and wild).

Cercospora rubi Sacc., blotch. Fla., La., Tex., Ark.

Fusisporium rubi Wint., double-blossom. N. Y., N. J., Del., Md., Miss., La., Tex., Ohio.

Gymnoconia interstitialis (Schl.) Lagh. (not on Lucretia dewberry), orange General, especially in Eastern States.

Kuehneola uredinis (Lk.) Arth., yellow rust. General east of Miss. River. Leptosphaeria coniothyrium (Fckl.) Sacc., cane-blight. N. C., Miss., Idaho. Mycosphaerella rubi E. W. Roark, leaf-spot. General. Peronospora potentillae D By., downy mildew. Conn.

P. rubi Rabh., downy mildew. Fla., Wash.

Pezizella lythri (Desm.) Shear and B. O. Dodge, fruit-rot.

Phyllosticta ruborum Sacc., leaf-spot. N. Y., Miss.

Plectodiscella veneta (Speg.) Burk., anthracnose. General.

Pucciniastrum americanum (Farl.) Arth., leaf-rust. Wis. (on *R. arcticus triflorus).

Sphaerotheca humuli (DC.) Burr., powdery mildew. Pa.

Rubus sp., Logan blackberry.

Armillaria mellea (Vahl) Quel., root-rot. Oreg.

Bacterium tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. Wash., Oreg. and Town.) Com. S. A. B.), crown-gall.

Wash.

Corticium vagum Berk. and Curt., crown-rot. Mycosphaerella rubi E. W. Roark, leaf-spot. Mich., Wash., Oreg.

M. rubina (Pk.) Jacz., spur-blight. Wash.

Plectodiscella veneta (Speg.) Burk., anthracnose. N. Y., Wash., Oreg.

Dwarf, undet. Wash., Oreg. Mosaic, undet. Wash., Oreg., Calif.

Rubus sp., raspberry.

Armillaria mellea (Vahl) Quel., root-rot. Wash., Oreg. Ascospora ruborum (Oud.) S. M. Zeller, leaf-spot. Mass., Oreg.

Bacterium tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall. General.

Botrytis cinerea Auct., gray-mold rot. General on harvested fruit.

Cercospora rubi Sacc., blotch. Fla., Ala.

Corticium vagum Berk. and Curt., crown-rot. Idaho. Cuscuta sp., dodder. Wis.

Cylindrosporium rubi Ell. and Morgan, leaf-spot. Tex., Ohio, Wis., Mo. Fusisporium rubi Wint., double-blossom. N. Y., Pa., Md.

Gymnoconia interstitialis (Schl.) Lagh., orange rust. General, especially in

Eastern States.

Leptosphaeria coniothyrium (Fckl.) Sacc., cane-blight. East of Great Plains except Southern States; Pacific Northwest.

Leptothyrium pomi (Mont. and Fr.) Sacc., flyspeck. Mass., Ind.

Mycosphaerella rubi E. W. Roark, leaf-spot. General.

M. rubina (Pk.) Jacz., spur-blight. Widespread in Northern States.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-Tex. rot.

Peronospora rubi Rabh., downy mildew. Wash.
Phragmidium imitans Arth., leaf-rust. Widespread in Northern States.
P. occidentale Arth., rust. Colo.

Phyllosticta bicolor Pk., leaf-spot. N. Y.

Plectodiscella veneta (Speg.) Burk., anthracnose. General.

Pucciniastrum americanum (Farl.) Arth., rust. Conn., Mass., Vt., Md., Va., Wis., Iowa, N. Dak.

Rhizopus nigricans Ehr., black-mold rot. General.

RUBUS—Continued.

Rubus sp., raspberry—Continued.

Sphaerotheca humuli (DC.) Wint., powdery mildew. Conn., N. Y., Ohio, Ill., Minn., Utah, Wash.

Verticillium alboatrum Reinke and Berth., bluestem, wilt. N. Y., Ohio, Mich., Minn., Wash., Oreg., Calif.

N. Y., Md., Pa., Ohio, Ind., Mich., Wis., Minn., Wash., Leaf-curl, undet. Oreg., Calif.

Mosaic, undet. Northeastern States; Minn., Pacific Northwest. Streak, undet. Conn., N. Y., Pa., Md., Ohio, Ind., Ill., Wis., Oreg.

RUDBECKIA.

R. laciniata, *goldenglow, coneflower.

Cercospora tabacina Ell. and Ev., leaf-spot. Wis.

Entyloma compositarum Farl., smut. Ohio, Iowa, Mo.

Erysiphe cichoracearum DC., powdery mildew. N. H., Conn., Md., W. Va.,

Ŏhio, Ind., Mich., Minn.

Phyllosticta rudbeckiae Ell. and Ev., leaf-spot. Wis., Iowa.
Plasmopara halstedii Farl., downy mildew. N. Dak., Iowa.
Ramularia rudbeckiae Pk., leaf-spot. N. Y., Pa., Mich., Iowa, Mont., Colo.
Septoria rudbeckiae Ell. and Hals., leaf-spot. Nebr., Kans.
Uromyces perigynius Hals., rust. Pa., Wis., Iowa, Mo., N. Dak., Nebr., Mont.

Leaf-spot. Nebr., Mont.

Leaf-spot. Wis., Iowa, Mo., N. Dak., S. Dak., Nebr., Mont.

U. rudbeckiae Arth. and Holw., rust. Ind., Ill., Miss. River to Rocky Mts.; N. Mex.

SACCHARUM.

S. officinarum, sugarcane.

Cercospora vaginae W. Krueger, red-spot. Fla. Colletotrichum falcatum F. A. Went, red-rot. Gulf States; Ark.

Gnomonia iliau H. L. Lyon, stem-rot, Iliau disease. La.

Helminthosporium sacchari Butl., eye leaf-spot. Ga., Fla., Miss. Heterodera radicicola (Greef) Muell., root-knot. Ga., Fla.

Leptosphaeria sacchari Van Breda de Haan, ring-spot. Fla., Ala.

Marasmius sacchari J. H. Wakker, root-rot. Gulf States.

M. stenophyllus Mont., root-rot. La., Tex.

Melanconium sacchari Mass., rind disease. Fla., La.

Phyllosticta sp., leaf-spot. Ga.

Sclerotium rolfsii Sacc., sheath-rot. Ga., Fla., Ala., La.
Thielaviopsis paradoxa (DeSeyn.) Hoehn., pineapple disease. Miss., La. Mosaic, undet. Gulf States; Ga., Ark.

SALIX.

Salix spp., willow.

Bacterium tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall. Conn., Tex.

Cercospora salicina Ell. and Ev., leaf-spot. Ill., La., Tex.

Coryneum salicinum (Cda.) Sacc., leaf-spot. N. Dak., Alaska. Cytospora chrysosperma (Pers.) Fr., canker. Western States; Ind., Minn.

Gloeosporium maculans Pk., leaf-spot. Idaho.
G. salicis West., leaf-spot. N. Y., N. J., Wis., Oreg.
Marssonia sp., twig-blight. Wash.

Marssonina populi (Lib.) Magn., leaf-spot. Wis.

Melampsora americana Arth., rust. General.

M. arctica Rostr., rust. Colo.

M. bigelowii Thuem., leaf-rust. General.
M. confluens (Pers.) Jack., rust. General, especially in Western States.
Nectria galligena Bres., European canker. Oreg.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Ind., Calif.

Phyllosticta apicalis Davis, leaf-spot.

Ramularia rosea (Fckl.) Sacc., leaf-spot. Wis., Colo.

Rhytisma salicinum Fr., tar-spot. Widespread.

Septoria albaniensis Thuem., leaf-spot. Mass., N. Y., Wis., Minn. S. didyma Fckl., leaf-spot. Wis.

S. didyma Fckl., leaf-spot. Wis. S. salicina Pk., leaf-spot. N. Y., Miss., Kans., Colo.

Trametes suaveolens Fr., white wood-rot. N. Y., N. J., Wis., Minn., Mo. Uncinula salicis (DC.) Wint., powdery mildew. General.

SAMBUCUS.

Sambucus spp., elderberry.

Ascochyta wisconsinia Davis, leaf-spot. Wis.
Cercospora catenospora Atk., leaf-spot. Ala., Miss., Tex., Kans.
C. depazeoides (Desm.) Sacc., leaf-spot. N. Y., Ala., Ga., Ind., Iowa, Kans.
C. lateritia Ell. and Hals., leaf-spot. Iowa, Kans.
C. sambucina Ell. and Kell., leaf-spot. Wash.
Cercosporella prolificans (Ell. and Holw.) Sacc., leaf-spot. Calif.

Cytospora chrysosperma (Pers.) Fr., canker. Kans., Wash.

Gloeosporium tineum Sacc., leaf-spot. Miss.

Microsphaera alni (Wallr.) Wint., powdery mildew. N. Y., Pa., Ohio, Ill. Widespread east of Great M. grossulariae (Wallr.) Lév., powdery mildew. Plains.

Nectria cinnabarina Fr., canker. Ind., N. Dak., Mont., Wash.

Phyllosticta sp., leaf-spot. Pa.

Puccinia sambuci (Schw.) Arth., rust. East of Great Plains.

Ramularia glauca Ell. and Ev., leaf-spot. Colo.

R. sambucina Pk., leaf-spot. N. Y., Mo., Wash.

Septoria sambucina Pk., leaf-spot. Widespread.

Sphaeropsis sambucina (Cke.) Sacc., canker. N. Y., Ind., N. Dak., Kans., Colo., Calif.

SAPINDUS.

Sapindus sp., soapberry.

Cylindrosporium griseum Heald and Wolf, leaf-blight. Tex. Glomerella cingulata (Ston.) Spauld. and Schrenk, bitter-rot. Fla. Phoradendron flavescens (Pursh) Nutt., mistletoe. Tex.

Uncinula circinata Cke. and Pk., powdery mildew. Tex.

SASSAFRAS.

S. variifolium, sassafras.

Actinothyrium gloeosporioides L. R. Tehon, leaf-spot.

Armillaria mellea (Vahl) Quel., root-rot.

Fomes ribis (Schum.) Fr., root-rot. Mo. Gloeosporium affine Ell. and Kell., leaf-spot. N. J., S. C., Ohio, Ind., Ill.

G. officinale Ell. and Ev., leaf-spot. Del.
Phoradendron flavescens (Pursh) Nutt., mistletoe. Tex.
Phyllosticta sassafras Cke., leaf-spot. Widespread in Eastern States.

SCHINUS.

S. molle, California peppertree.

Armillaria mellea (Vahl) Quel., root-rot. Calif.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-Tex.

Trametes schini J. G. Brown, timber-rot. Ariz.

SECALE.

S. cereale, rye.

Bacterium translucens secalis C. S. Reddy, James Godkin, and A. G. Johnson, bacterial blight. Ind., Ill., Wis.
B. translucens undulosum EFS., L. R. Jones, and C. S. Reddy, black-chaff. Wis.

Clariceps purpurea (Fr.) Tul., ergot. General. Colletotrichum graminicolum (Ces.) Wils., anthracnose. General east of Great Plains.

Erysiphe graminis DC., powdery mildew. General.

Fusarium culmorum leteius Sherb., seedling blight.

Gibberella saubinetii (Mont.) Sacc., scab. Occurs scatteringly east of Great Plains.

Helminthosporium sativum Pam., King, and Bak., leaf-spot, foot-rot. Pa., N. Y., Minn.; probably other States. Marasmius tritici P. A. Young. Ill.

Ophiobolus graminis Sacc., take-all. N. Y. Puccinia dispersa Eriks., leaf-rust. General, especially east of Rocky Mts.

P. glumarum (Schm.) Eriks. and Henn., stripe-rust. Wash., Oreg. P. graminis Pers., stem-rust. General.

SECALE—Continued.

S. cereale, rye—Continued.

Rhynchosporium secalis (Oud.) Davis, scald. Upper Miss. Valley; Wash., Čalif.

Septoria secalis Prill. and Del., leaf-blotch. East of Great Plains. Tilletia tritici (Bjerk.) Wint., covered smut. N. Y., Wash. Tylenchus tritici (Stein.) Bast., nematode. Va., S. C., Kans.

Tylenchus tritici (Stein.) Bast., nematode. Urocystis occulta (Wallr.) Rabh., stem-smut. occasional in West. General east of Great Plains.

Ustilago tritici (Pers.) Rostr., loose-smut. Infrequent in Eastern States. Mosaic, undet. Va., Ill.

SEQUOIA.

S. gigantea, big tree.

Cercospora sequoiae Ell. and Ev., leaf-spot. Pa.

S. sempervirens, redwood.

Botrytis cinerea Auct., gray-mold. Hexagonia carbonaria Berk. and Curt., brown-rot. Calif. Polyporus amorphus Fr., rot. Calif. Calif.

Trametes isabellina Fr., white-rot. T. odorata (Wulf.) Fr., brown-rot. Calif.

SHEPHERDIA.

S. argentea, silver buffaloberry.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Oreg. Puccinia coronata Cda., crown-rust. N. Dak., Nebr., Mont., Wyo., Colo. Sphaerotheca humuli (DC.) Burr., powdery mildew. Colo., Mont.

S. canadensis, russet buffaloberry.

Puccinia caricis-shepherdiae Davis, rust. N. Y., Mich., Wis., S. Dak. P. coronata Cda., crown-rust. Occurs scatteringly in Rocky Mt. States and Pacific Coast States.

SOJA.

S. max, soybean.

Bacillus lathyri Manns and Taub., streak. Del., Nebr.

Bacterium glycineum Coerper, bacterial blight. Pa., Ind., Ill., Wis., Miss.,

B. phaseoli sojense Hedges, bacterial pustule. Va., N. C., S. C., La., Tex., Ark., Kans.

B. sojae Wolf, bacterial blight. Conn., N. C., S. C., La., Mich., Wis., Nebr. B. solanacearum EFS. (Phytomonas solanaceara (EFS.) Com. S. A. B.), bacterial wilt. N. C.

Botrytis cinerea Auct., gray-mold. Ohio. Cercospora cruenta Sacc., leaf-spot. Ala.

Certospora cruenta Sacc., lear-spot. Ala.
Corticium vagum Berk. and Curt., stem-rot. Tenn., Ind.
Diaporthe sojae S. G. Lehman, pod-blight. N. C., Ind.
Erysiphe polygoni DC., powdery mildew. N. C.
Fusarium vasinfectum tracheiphilum EFS., wilt. Southern States; Ind.
Glomerella cingulata (Ston.) Spauld. and Schrenk, anthracnose. N. C.
Heterodera radicicola (Greef) Muell., root-knot. S. C., Ark., Calif.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), rootrot.

Peronospora sojae Wolf, downy mildew. Del., Ky., N. C.

P. trifoliorum D By., downy mildew. N. Y.

Sclerotinia sclerotiorum (Lib.) Mass., stem-rot. Va. Sclerotium rolfsii Sacc., stem-rot. N. C., S. C., Ala., Miss., La. Septoria glycines Takewo Hemmi, leaf-spot. Del. Mosaic, undet. Widespread where crop is grown.

SOLANUM.

S. melongena, eggplant.

Alternaria solani (Ell. and Mart.) L. R. Jones and A. J. Grout, leaf-spot. Conn., N. Y., Pa., Del., Md., W. Va., Fla.

Ascochyta lycopersici Brun. (Didymella lycopersici Kleb., Diplodina destruc-

tiva (Plow.) Petr.), leaf-spot. N. Y., Del., Ind.

SOLANUM-Continued.

S. melongena, eggplant-Continued.

Bacterium solanacearum EFS. (Phytomonas solanaceara (EFS.) Com. S. A. B.), bacterial wilt. Southern States.

Botrytis cinerea Auct., gray-mold rot. Mass., Conn., Wash., Calif.

Colletotrichum atramentarium (Berk. and Br.) Taub., fruit-rot, anthracnose.

General east of Great Plains; Utah.

Corticium vagum Berk. and Curt., stem-rot. Pa., N. J., Fla., Ala., La., Tex., Wash.

Diplodia sp., fruit-spot. Fla.

Fusarium spp., wilt. East of Miss. River; La., N. Mex.

Gloeosporium melongenae Ell. and Hals., anthracnose. General east of Great Plains.

Heterodera radicicola (Greef) Muell., root-knot. Southern States: Nev. Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-

Phoma sp., storage rot. Me.

Phomopsis vexans (Sacc. and Syd.) Harter, leaf-spot, fruit-rot. East of Great Plains; Calif.

Phyllosticta solani Ell. and Mart., leaf-spot. La.

Phytostitu south En. and Mart, lear-spot. La.
Phytophthora sp., rot. Ind.
P. infestans (Mont.) D By., late-blight. N. Y.
Pythium debaryanum Hesse, damping-off. Conn.
Sclerotinia sclerotiorum (Lib.) Mass., stem-rot. Va., La.
Sclerotium rolfsii Sacc., stem-rot. Ga., La.
Verticillium alboatrum Reinke and Berth., wilt. Mass., N. Y., N. J., Pa., Va., S. C., Ga.

Mosaic, undet. Conn., Fla., Iowa.

S. tuberosum, potato.

Actinomyces scabies (Thax.) Gues., scab. General.
Alternaria solani (Ell. and Mart.) L. R. Jones and A. J. Grout, early-blight. General, especially east of Rocky Mts.

Armillaria mellea (Vahl) Quel., root-rot. Mich., Wis., Wyo., Pacific coast. Bacillus spp., soft-rot. General, especially on harvested crop in transit and market.

B. phytophthorus O. Appel (Erwinia atroseptica (Van Hall) Com. S. A. B.), black-leg. General; reported from practically every State.

Bacterium solanacearum EFS. (Phytomonas solanaceara (EFS.) Com. S. A. B.), bacterial wilt. Southern States.

Cercospora concors (Casp.) Sacc., leaf-blotch. Vt., N. Y., W. Va., Ga., Ind., Mich.

C. solanicola Atk., leaf-spot. Ala. Colletotrichum atramentarium (Berk. and Br.) Taub., anthracnose. N. Y., W. Va., Ohio, Fla., Utah, Oreg.

Corticium vagum Berk. and Curt., scurf, stem-rot. General; in every State. Fusarium spp., dry rots. Common everywhere on harvested tubers. F. eumartii C. W. Carpenter, stem-end rot. N. Y., Pa., Ohio, Nebr. F. oxysporum Schl., wilt. Widespread; less destructive in more northern

late-potato sections.

F. radicicola Woll., jelly end-rot. N. Y., Va., D. C., Miss.; not uncommon in Western States.
F. sulphureum Schl., tuber rot. N. Dak.

F. trichothecioides Woll., powdery dry-rot. Ohio, Wis., Minn., Iowa, S. Dak., Nebr., Ariz., Utah, Idaho, Wash., Oreg.

Heterodera radicicola (Greef) Muell., root-knot. Southern States, Kans.,

Nev., Pacific coast.

Oidium sp., powdery mildew. Pa.

Phoma sp. (doubtfully parasitic), stem-blight. New England, N. Y., Pa., Mich.

P. tuberosa I. E. Melhus, J. Rosenbaum, and E. S. Schultz, storage rot.

Phytophthora infestans (Mont.) D By., late-blight. East of Great Plains; Pacific coast. Most frequent in Northeast.

Pythium debaryanum Hesse, leak. Conn., N. Y., N. J., N. C., Miss., La., Minn., Nebr., Mont., Wyo., Colo., Idaho, Wash., Calif.

58433-26†-

SOLANUM—Continued.

S. tuberosum, potato—Continued.

Rhizoctonia crocorum (Pers.) DC., violet root-rot. N. Y., Nebr., Wash.,

Oreg.

Rhizopus nigricans Ehr., leak. Ohio, Idaho, Wash., Calif.

Sclerotinia sclerotiorum (Lib.) Mass., stem-rot. N. Y., Fla.

Sclerotium rolfsii Sacc., stem-rot. South Atlantic and Gulf Coast States.

Spondylocladium atrovirens C. O. Harz, silver scurf. General.

Spongospora subterranea (Wallr.) T. Johnson, powdery scab. Me., Conn.,

N. Y., Pa., S. C., Fla., Minn., Wyo., Wash., Oreg.

Synchytrium endobioticum (Schilb.) Perc., wart. Pa., Md., W. Va.

Verticillium alboatrum Reinke and Berth., wilt. New England, N. Y., Pa.,

Ohio Wis N. Dak Colo, Utah Idaho Pacific coast.

Ohio, Wis., N. Dak., Colo., Utah, Idaho, Pacific coast. Black-heart, nonpar. Frequent, especially as a result of overheating in

Curly-dwarf, undet. Frequent.

Hollow-heart, nonpar. Frequently reported, especially in overgrown tubers. Hopperburn, undet. East of Great Plains.

Internal brown-spot, nonpar. Frequent.

Leaf-roll, undet. General.

Leak, various causes. General (see also Pythium debaryanum and Rhizopus nigricans).

Malnutrition, nonpar. New England, Middle Atlantic States, Minn., Wash.

Mosaic, undet. General.

Net-necrosis, undet. Frequent.
Russet dwarf, undet. Idaho.
Spindle-tuber, undet. Vt., N. Y., N. J., S. Dak., Nebr., Ky.
Streak, undet. Atlantic Coast States, Mich., Minn., Idaho, Wash., Calif. Tipburn, nonpar. General.

Witches'-broom, undet. Me., Mich., Minn.; Pacific Northwest. Yellow dwarf, undet. Vt., N. Y., N. J., Pa., Fla., S. Dak.

SOPHORA.

S. japonica, *pagoda tree.

Microsphaera alni (Wallr.) Wint., powdery mildew. Conn. Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-rot. Tex.

SORBUS.

Sorbus sp., mountain-ash.

Bacillus amylovorus (Burr.) Trev. (Erwinia amylovora (Burr.) Com. S. A. B.), blight. Mich., Minn.

Cytospora chrysosperma (Pers.) Fr., canker. Mont.
Gymnosporangium blasdaleanum (Diet. and Holw.) Kern, rust. Oreg.
G. cornutum (Pers.) Arth., rust. New England, N. Y., Mich., Wis., Mont., Wyo., Colo.

G. globosum Farl., rust. New England, N. Y. G. juniperinum (L.) C. Martius, rust. Mont., Wyo., Colo., Wash.

G. nootkatensis (Trel.) Arth., rust. Wash., Alaska. Nummularia discreta (Schw.) Tul., blister canker. Mass., Pa.

Phyllosticta sorbi West., leaf-spot. Mo.

Physalospora malorum (Pk.) Shear (P. cydoniae Am. Auct.), black-rot,

Polystictus hirsutus Fr., white sap-rot.

Valsa leucostoma (Pers.) Fr., die-back. Mont. Venturia inaequalis (Cke.) Aderh., scab. Minn.

SPINACIA.

S. oleracea, spinach.

oleracea, spinach.

Cercospora beticola Sacc., leaf-spot. Mass., Tex.

C. dubia (H. Riess) Wint., leaf-spot. Mo.

C. flagelliformis Ell. and Hals., leaf-spot. N. J., Del., Ga., Ind., Minn.

Cladosporium macrocarpum Preuss, scab, black-mold. Pa., Del., Tex.

C. Victorichum spinaciae Ell. and Hals., anthracnose. Conn., N. Y., N. J.,

Va., La., Tex. Corticium vagum Berk. and Curt., stem-rot. Pa., Ill., Wash. Entyloma ellisii Hals., smut. N. J.

SPINACIA—Continued.

S. oleracea, spinach-Continued.

Fusarium sp., root-rot. Tex., Oreg. F. spinaciae Sherb., wilt. Idaho.

Heterodera radicicola (Greef) Muell., root-knot. Ind. Heterosporium variabile Cke., leaf-spot. Conn., Mass., Va., Mo., Tex.,

Macrosporium cheiranthi (Lib.) Fr., leaf-spot. Ohio.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-rot. Tex.

Peronospora effusa (Grev.) Ces., downy mildew. General. Phyllosticta chenopodii Sacc., leaf-spot. N. J., Del., Va.

Phytophthora sp., crown-rot. N. J., Ind.
Puccinia sarcobati (Pk.) Bethel, rust. Ariz., Wash., Oreg.
Pythium debaryanum Hesse, damping-off. Conn.

Malnutrition, nonpar. Va. Mosaic, undet. Widespread.

SPIRAEA.

Spiraea sp., spirea.

Bacillus amylovorus (Burr.) Trev. (Erwinia amylovora (Burr.) Com. S. A. B.), blight. Md.

Cercospora rubigo Cke. and Hark., leaf-spot. Kans.

Cylindrosporium filipendulae Thuem., leaf-spot. Wis., Wash., Oreg.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-rot. Tex.

Podosphaera oxyacanthae DC., powdery mildew. New England, Ohio, Mo., Wyo., Wash.

Rhopalidium cercosporelloides Dearn., leaf-spot. Idaho. Septoria salicifolia (Trel.) Ell. and Ev., leaf-spot. Wis., Kans.

Sphaerotheca humuli (DC.) Burr., powdery mildew. Conn., N. Y.

STAPHYLEA.

S. trifolia, American bladdernut.

Ramularia isarioides Sacc., leaf-spot. Pa., Wis., Mo. Septoria cirrhosa Wint., leaf-spot. Mo.

STIZOLOBIUM.

S. deeringianum, velvetbean.

Aplanobacter stizolobii Wolf, bacterial leaf-spot. N. C. Apitabolacter stizotobit with, bacterial leaf-spot. N. C.
Bacterium vignae M. W. Gardner and J. B. Kendrick, bacterial spot. Ind.
Cercospora mucunae Syd., leaf-spot. Ala.
C. stizolobii Syd., leaf-spot. N. C., S. C., Fla.
Corticium vagum Berk. and Curt., stem-rot. Ga., La.
Heterodera radicicola (Greef) Muell., root-knot. Calif.
Phyllosticta mucunae Ell. and Ev., leaf-spot. Ala.
Solventium rafesi Sace. stem-rot. Ga. Ala.

Sclerotium rolfsii Sacc., stem-rot. Ga., Ala.

SYMPHORICARPOS.

Symphoricarpos sp., snowberry, coralberry.

Cercospora symphoricarpi Ell. and Ev., leaf-spot. Nebr., Kans., Mont.

Fomes ribis (Schum.) Fr., root-rot. N. Dak., Kans. Microsphaera diffusa Cke. and Pk., powdery mildew. General.

Nectria coryli Fckl., canker. N. Dak.

Puccinia abundans (Pk.) Jack., rust. Great Plains and westward.

P. symphoricarpi Hark., rust. Western States.

Septoria oedospora F. E. Clements, leaf-spot. Colo.

S. symphoricarpi Ell. and Ev., leaf-spot. N. Dak., Nebr., Mont., Idaho, Wash.

SYRINGA.

Syringa sp., lilac.

Hymenochaete agglutinans Ell., stem girdling. Conn.

S. persica, Persian lilac.

Cercospora lilacis (Desm.) Sacc., leaf-spot. Miss.

Microsphaera alni (Wallr.) Wint., powdery mildew. Iowa.

SYRINGA-Continued.

S. vulgaris, lilac.

Botrytis cinerea Auct., blossom blight. Wash.

Cercospora lilacis (Desm.) Sacc., leaf-spot. S. C., Miss., Minn.
C. macromaculans Heald and Wolf, leaf-spot. Tex., Okla.
Corticium stevensii Burt (Hypochnus ochroleucus F. Noack), leaf-blight. N. C., Miss.

Microsphaera alni (Wallr.) Wint., powdery mildew. General.

Phyllosticta halstedii Ell. and Ev., leaf-spot. N. J.

P. syringae West., leaf-spot. Wis.

Polysticius versicolor (L.) Fr., yellowish wood-rot. Mo.

Pa. Sphaeropsis sp.

Uncinula clintonii Pk., powdery mildew. Ind.

TAGETES.

Tagetes sp., marigold.

Botrytis cinerea Auct., rot. Conn.

TAXODIUM.

T. distichum, baldcypress.

Fomes geotropus Cke., pecky heartwood rot. Southern States. Pestalozzia funerea Desm., leaf-blight. Tex.

THUJA.

T. occidentalis, arborvitae.

Keithia thujina E. J. Durand, leaf-blight. Va., Wis. Lophodermium pinastri (Schrad.) Chev., leaf-cast. Me. Pestalozzia funerea Desm., leaf-blight. Me., Mass., Va., N. C. Phomopsis juniperovora G. Hahn, nursery blight. Pa.

T. orientalis, oriental arborvitae.

Diplodia sp., die-back. Fla.

Phomopsis juniperovora G. Hahn, nursery blight. Pa., Ind., Ill., Iowa, Nebr., Kans.

T. plicata, giant arborvitae.

Armillaria mellea (Vahl) Quel., root-rot. Coryneum thujinum Dearn., leaf-blight.

Herpotrichia nigra Hartig, matting. Idaho.

Keithia thujina E. J. Durand, leaf-blight. Pacific Northwest.

Mycosphaerella thujae Petr., leaf-spot. Idaho.

Polyporus schweinitzii Fr., red-brown butt-rot. Idaho.

Poria weirii Murr., brown laminated rot. Throughout range of host. Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot.

TILIA.

Tilia sp., linden, basswood.

Actinonema tiliae Allesch., leaf-spot. Ind.

Cercospora microsora Sacc., leaf-blight. Widespread east of Great Plains.

Certospora microsora Sacc., tear-bright. Widespread east of Great Flains. C. tiliae Pk., leaf-spot. N. Y.
Gloeosporium tiliae Oud., anthracnose. N. Y., Mass., Va., Minn.
Hydnum septentrionale Fr., white sapwood rot. Ala.
Melanconium tiliae Pk., twig-blight: Ohio.
Phoradendron flavescens (Pursh) Nutt., mistletoe.
Phyllosticta tiliae Sacc. and Speg., leaf-spot. N. Y., Pa., W. Va.
Uncinula clintonii Pk., powdery mildew. Widespread in Eastern States.

TRAGOPOGON.

T. porrifolius, vegetable-oyster, salsify.

Albugo tragopogonis (DC.) S. F. Gray, white-rust. General in northern half of United States.

Bacillus carotovorus L. R. Jones (Erwinia carotovora (Jones) Com. S. A. B.), soft-rot. Conn.

Corticium vagum Berk, and Curt., stem-rot. Wash.

Erysiphe cichoracearum DC., powdery mildew. Nebr., Wash. Heterodera radicicola (Greef) Muell., root-knot. Va., Ala., Wash.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), rootrot. Tex.

TRAGOPOGON—Continued.

T. porrifolius, vegetable-oyster, salsify—Continued. Sclerotinia intermedia G. B. Ramsey, root-rot. Ill. Verticillium sp., wilt. N. Y.

TRIFOLIUM.

T. hybridum, alsike clover.

Bacillus lathyri Manns and Taub., streak. Del.
Bacterium trifoliorum L. R. Jones et al., bacterial leaf-spot. General in

Cercospora zebrina Pass., leaf-spot. Va., Ind. Colletotrichum trifolii S. M. Bain, anthracnose. East of Great Plains; Colo.,

Corticium vagum Berk. and Curt., root-rot. Ohio, Minn. Erysiphe polygoni DC., powdery mildew. W. Va., Minn., Idaho. Phyllachora trifolii (Pers.) Fckl., sooty spot. Minn. Sclerotinia trifoliorum Eriks., root-rot. Mich. Sphaerulina trifolii Rostr., leaf-spot. N. Y., Ill., Mo. Thielavia basicola (Berk. and Br.) Zopf, black root-rot. Uromyces trifolii (Hedw. f.) Lév., rust. General. Mosaic, undet. Pa.

T. incarnatum, crimson clover.

Bacterium trifoliorum L. R. Jones et al., leaf-spot. Md., Va., N. C., Ind., Wis., Iowa.

Botrytis sp., gray-mold. Del.

Cercospora medicaginis Ell. and Ev., leaf-spot. Del. Colletotrichum trifolii S. M. Bain., anthracnose. Ky. Corticium vagum Berk. and Curt., root-rot. N. C. Gloeosporium caulivorum L. Kirchner, anthracnose. N. C. Heterodera radicicola (Greef) Muell., root-knot. Macrosporium sp., leaf-spot. Va.

Phyllachora trifolii (Pers.) Fckl., sooty spot. Pa., Md., Ga., Ala., N. Dak. Sclerotinia trifoliorum Eriks., root-rot. N. J., Md., N. C., S. C., Ky., Tenn., Oreg.

Sclerotium rolfsii Sacc., stem-rot. La.

Sphaerulina trifolii Rostr., leaf-spot. N. Y., Ill., Mo. Thielavia basicola (Berk. and Br.) Zopf, black root-rot. Uromyces fallens (Desm.) Kern, rust. Del., Ind., S. Dak. U. trifolii (Hedw. f.) Lév., rust. Pa., Ala., Wis., Minn. Mosaic, undet. Pa.

*T. medium, zigzag clover.

Bacterium trifoliorum L. R. Jones et al., leaf-spot. Md., Va., N. C., Ind., Wis., Iowa.

Uromyces trifolii (Hedw. f.) Lév., rust.

T. pratense, red clover (includes *T. medium perenne, mammoth clover).

Bacillus lathyri Manns and Taub., streak. Del.

Bacterium trifoliorum L. R. Jones et al., leaf-spot. D. C., Md., Va., N. C., Ind., Wis., Iowa.

Botrytis sp., gray-mold. Pa.

Cercospora medicaginis Ell. and Ev., leaf-spot. N. J.
C. zebrina Pass., leaf-spot. N. Y., Mich., Ind., Iowa.
Colletotrichum destructivum P. J. O'Gara, anthracnose. Utah.
C. trifolii S. M. Bain, anthracnose. N. Y., Pa., N. J., Del., Va., Ohio,
Ind., Mich., Wis., Ky., Tenn.
Cuscuta spp., dodder. N. Y., Del., Md., La., Ohio, Nebr.
Erystphe polygoni DC., powdery mildew. Widespread, especially abundant
east of Great Plains.
Glossporium analysissum I. Kirchora ana

Gloeosporium caulivorum L. Kirchner, anthracnose. N. Y. to Va., westward to Mo.

Heterodera radicicola (Greef) Muell., root-knot. W. Va., La., Utah. Macrosporium sarcinaeforme Cav., leaf-spot. East of Great Plains.

Phyllachora trifolii (Pers.) Fckl., sooty spot. East of Great Plains; Wash.,

Oreg. Pseudopeziza trifolii (Biv.) Fckl., leaf-spot. Widespread in Northern States.

TRIFOLIUM—Continued.

T. pratense, red clover, etc.—Continued.

Sclerotinia trifoliorum Eriks., root-rot. Pa., N. C., Ky., Tenn., La., Ind.,

Mich., Oreg.

Septoria trifolii Ell., leaf-spot. N. J.

Sphaerulina trifolii Rostr., leaf-spot. N. Y., Ill., Mo.

Thielavia basicola (Berk. and Br.) Zopf, black root-rot.

Tylenchus dipsaci (Kuehn) Bast., stem nematode. Utah, Pacific Northwest.

Uromyces fallens (Desm.) Kern, rust. General.

Mosaic, undet. Conn., Pa., Ark., Ind., Minn.

T. repens, white clover.

Bacterium trifoliorum L. R. Jones et al., leaf-spot. D. C., Md., Va., N. C., Ind., Wis., Iowa.

Brachusporium trifolii C. H. Kauffman, blight. D. C.

Cercospora helvola Sacc., leaf-spot. N. J.

Corticium vagum Berk. and Curt., stem-rot. W. Va., Idaho.

Erysiphe polygoni DC., powdery mildew. W. Heterodera radicicola (Greef) Muell., root-knot.

Peronospora trifoliorum D By., downy mildew. N Phyllachora trifolii (Pers.) Fckl., sooty spot. East Pseudoneziza trifolii (Biv.) Fckl., leaf-spot. Miss. Nebr.

East of Great Plains; Utah.

Sclerotinia trifoliorum Eriks., root-rot. Miss., Oreg. Sphaerulina trifolii Rostr., leaf-spot. N. Y., N. J., Ill., Mo. Thielavia basicola (Berk. and Br.) Zopf, black root-rot. Conn. Uromyces nerviphila (Grognot) Lagh., rust. N. Y., Wis., Colo. U. trifolii (Hedw. f.) Lév., rust. General.

TRITICUM.

T. aestivum, wheat.

Bacterium atrofaciens McC. (Phytomonas atrofaciens (McC.) Com. S. A. B.), basal glume-rot. General in States between Miss. River and Rocky Mts.; Mich., N. Y., Pa.

B. translucens undulosum EFS., L. R. Jones, and C. S. Reddy, black-chaff.

Miss. Valley; Great Plains area; Mont., Idaho. Claviceps purpurea (Fr.) Tul., ergot. Occurs scatteringly, especially on

durum wheat. Colletotrichum graminicolum (Ces.) Wils., anthracnose. East of Great

Erysiphe graminis DC., powdery mildew. General. Fusarium culmorum leteius Sherb., seedling blight. Oreg.

Gibberella saubinetii (Mont.) Sacc., scab. General east of Great Plains; most prevalent in Corn Belt.

Helminthosporium sativum Pam., King, and Bak., foot-rot. Widely distributed, especially in upper Miss. Valley States.

Leptosphaeria tritici (S. Garovaglio) Pass., leaf-spot. N. Y., Iowa, Nebr. Marasmius tritici P. A. Young, root-rot. Ill.

Mycosphaerella tulasnei Jacz. (Cladosporium herbarum (Pers.) Lk.; Hormo-

dendrum cladosporioides Sacc.), sooty mold. N. Y., N. J., W. Va., Ohio, Mich., Pacific coast.

Ophiobolus graminis Sacc., take-all. N. Y., Md., Va., N. C., Tenn., Ark.,

Ind., Kans., Wash., Oreg., Calif. Podosporiella verticillata P. J. O'Gara, seedling blight. Utah.

Puccinia glumarum (Schm.) Eriks. and Henn., stripe-rust. West of Great Plains.

P. graminis Pers., stem-rust. General; most prevalent in the spring-wheat area.

P. triticina Eriks., leaf-rust. General, especially prevalent in South. Sclerospora macrospora Sacc., downy mildew. Del., Ky., Tenn., Calif. Sclerotium rhizodes Auer., Sclerotium blight. Idaho, Mont., Wash.

Septoria nodorum Berk., glume-blotch. General; most prevalent in South and Ohio Valley States.

S. tritici Desm., speckled leaf-blotch. General.
Tilletia laevis Kuehn, bunt. General.
T. tritici (Bjerk.) Wint., bunt. Mostly west of Miss. River. Serious in Pacific Northwest.

TRITICUM-Continued.

T. aestivum, wheat—Continued.

Tylenchus tritici (Stein.) Bast., nematode. N. Y., Va., W. Va., N. C., S. C., Ga., Calif.

Urocystis tritici Koern., flag-smut. Ill., Mo., Kans.

Ustilago tritici (Pers.) Rostr., loose-smut. Widespread. Wojnowicia graminis (McAlp.) Sacc. and D. Sacc., foot-rot. N. Y., Kans., Ark., Oreg.

Black-point, associated with Helminthosporium spp. N. Dak. Mosaic, undet. Nebr., Ind., Ill. Rosette, undet. Ill., Ind. Sterility, undet. Minn., N. Dak., Kans., Mo., Tex. Stripe, undet. N. Y., Pa., Ill.

*T. dicoccum, emmer.

Ophiobolus graminis Sacc., take-all. N. Y.

Puccinia glumarum (Schm.) Eriks. and Henn., stripe-rust.

P. graminis Pers., stem-rust. Tex., Okla., Mo., Wash. P. triticina Eriks., leaf-rust. Ga., Tex. Septoria nodorum Berk., glume-blotch. Md. Tilletia tritici (Bjerk.) Wint., bunt. N. Dak. Tylenchus tritici (Stein.) Bast., nematode. Va.

*T. spelta, spelt.

Colletotrichum graminicolum (Ces.) Wils., anthracnose. Ill.

Cotteotrichum grammachum (Ces.) Wils., anthrachose. In.
Gibberella saubinetii (Mont.) Sacc., scab. Md., Ill., Minn.
Ophiobolus graminis Sacc., take-all. N. Y.
Puccinia glumarum (Schm.) Eriks. and Henn., stripe-rust. Idaho.
P. graminis Pers., stem-rust. Mo., Minn., N. Dak., Kans., Wyo., Wash.
P. triticina Eriks., leaf-rust. Wis., Minn., Tex.
Tilletia tritici (Bjerk.) Wint., bunt. N. Dak.
Tylenchus tritici (Stein.) Bast., nematode. Va.
Letilaga tritici (Pors.) Postr. Lossosmut. N. V. Ustilago tritici (Pers.) Kostr., loose-smut. N. Y.

TROPAEOLUM.

T. majus, nasturtium.

Alternaria sp. (associated with Pleospora), black-mold. N. J.

Bacterium aptatum N. Brown and Jamieson (Phytomonas aptatum (Brown

and Jamieson (Phytomonas aptatum (Brown and Jamieson) Com. S. A. B.), leaf-spot. N. J., Miss. B. solanacearum EFS. (Phytomonas solanaceara (EFS.) Com. S. A. B.), bacterial wilt. Md., Va., Fla. Cercospora tropaeoli Atk., leaf-spot. Ala. Heterodera radicicola (Greef) Muell., root-knot. N. J. Pleospora tropaeoli Hals., leaf-spot. Ohio. Puccinia sarcobati (Pk.) Bethel, rust. Utah (a single report).

TSUGA.

T. canadensis, Canada hemlock.

Armillaria mellea (Vahl) Quel., root-rot. Pa.

Fomes pinicola Fr., brown crumbly rot. General in Northeastern States.

F. roseus (Alb. and Schw.) Fr., brown pocket rot. N. Y. Hymenochaete agglutinans Ell. Pa.

Hypoderma brachysporum (Rostr.) Tub., leaf-cast. Vt. Keithia tsugae (Farl.) E. J. Durand, leaf-blight. N. H., Wis.

Melampsora abietis-canadensis (Farl.) C. A. Ludwig, rust. New England; N. Y., and westward to northern Wis.

M. farlowii (Arth.) Davis, rust. New England.

Polyporus borealis Fr., cuboidal rot. N. Y.

Pucciniastrum hydrangeae (Berk. and Curt.) Arth., rust. Va.

P. myrtilli (Schum.) Arth., rust. New England, N. Y., Pa., Va., W. Va., N. C., Ind.

Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot.

T. heterophylla, western hemlock.

Botrytis sp., seedling twig-blight. Idaho.

Caeoma dubium C. A. Ludwig, rust. Wash., Oreg. Dimerosporium tsugae Dearn., sooty mold. Wash., Oreg.

TSUGA-Continued.

T. heterophylla, western hemlock—Continued.

Echinodontium tinctorium Ell. and Ev., brown stringy rot. Mont., Idaho.

Fomes annosus Fr., white spongy rot. Wash.

F. officinalis Fr., reddish brown-rot.

F. pinicola Fr., brown crumbly rot. General with host.

Polyporus dryadeus (Pers.) Fr., white root-rot. Pacific Northwest.

P. schweinitzii Fr., red-brown butt-rot. Oreg.

P. sulphureus (Bull.) Fr., brown-checked wood-rot.
Razoumofskya tsugensis C. O. Rosendahl, hemlock mistletoe. Pacific Northwest: Alaska.

Rhizina inflata (Schaeff.) Sacc., seedling blight. Idaho.

Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot. Wash.

Uredo holwayi Arth., needle rust. Mont., Idaho.

T. mertensiana, mountain hemlock.

Echinodontium tinctorium Ell. and Ev., brown stringy rot. Fomes officinalis Fr., brown heartwood rot. Idaho. F. pinicola Fr., brown crumbly rot. General with host.

Herpotrichia nigra Hartig, matting. Oreg.

Polyporus schweinitzii Fr., red-brown butt-rot.

Pythium debaryanum Hesse, damping-off.
Razoumofskya tsugensis C. O. Rosendahl, mistletoe. Idaho, Wash.
Trametes pini (Brot.) Fr. (Fomes pini (Thore) Karst.), honeycomb rot. Oreg.

TULIPA.

Tulipa sp., tulip.

Botrytis tulipae (Lib.) E. F. Hopkins, botrytis blight. General.

Rhizoctonia tuliparum (Kleb.) Whet. and John M. Arthur, gray bulb-rot.

Sclerotinia sp., white-rot. Ohio.

ULMUS.

Ulmus spp., elms.

Cercospora sphaeriaeformis Cke., leaf-spot. La.

Coniothyrium ulmi Tharp. Tex.

Cylindrosporium tenuisporum Heald and Wolf, leaf-spot. Tex.

Fomes applanatus (Pers.) Wallr. (Ganoderma applanatum (Pers.) Pat.), whitestreaked rot. Northeastern States.

F. igniarius (L.) Fr., white heart-rot. Northeastern States.

Gloeosporium inconspicuum Cav., leaf-spot. Mass., Ohio, Mich., Minn.,

Gnomonia ulmea (Sacc.) Thuem., black-spot. General east of Great Plains. Heterodera radicola (Greef) Muell., root-knot. Calif.

Microsphaera alni (Wallr.) Wint., powdery mildew. Ill., Iowa.

Mycosphaerella ulmi Kleb., leaf-spot. East of Great Plains.

Nectria cinnabarina (Tode) Fr., canker. Ohio.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-Tex., Ariz.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Ind., Southwest.

Phyllactinia corylea (Pers.) Karst., powdery mildew. S. C., Ala., Miss.,

Phyllosticta confertissima Ell. and Ev., leaf-spot. Pa., Kans.

P. erratica Ell. and Ev., leaf-spot. Ala.

P. melaleuca Ell. and Ev., leaf-spot. Ala., Miss., Okla., Mich., Iowa, Mo.,

Pleurotus ulmarius Bull., white sap-rot. Widespread east of Great Plains.

Poronidulus conchifer (Schw.) Murr., twig-blight. Ohio.
Sphaeropsis ulmicola Ell. and Ev., canker. Pa., Md., Ohio, Wis.
Taphrina ulmi (Fckl.) Johans., leaf blister. Mass.
Uncinula macrospora Pk., powdery mildew. General east of Great Plains.

VACCINIUM.

Vaccinium spp., blueberry.

Bacterium tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall. Miss.
Calyptospora columnaris (Alb. and Schw.) Kuehn, stem-rust. Frequent in

the Northern States and Pacific coast.

Exobasidium vaccinii (Fckl.) Wor., red leaf-spot. General. Microsphaera alni vaccinii (Schw.) Salm., powdery mildew. North Atlantic States; Ohio, Ill., Wash.

Pucciniastrum myrtilli (Schum.) Arth., leaf-rust. General, especially in Northern States.

Ramularia effusa Pk., leaf-spot. Wis.

Rhytisma vaccinii (Schw.) Fr., tar-spot. Widespread. Sclerotinia vaccinii-corymbosi J. M. Reade, fruit-rot, twig-blight. North

Atlantic States; Ind., Mich.

Septoria albopunctata Cke., leaf-spot. S. C.

S. difformis Cke. and Pk., leaf-spot. N. Y.

Venturia compacta Pk. Me., Mass., La., Wis.

V. macrocarpon, cranberry.

Acanthorhyncus vaccinii Shear, blotch-rot. Me., Mass., N. J., W. Va., N. C., Mich., Wis., Wash.

Botrytis cinerea Auct., gray-mold rot. Wash.

Ceuthospora lunata Shear, black-rot. Mass., N. J., Wash.

Exobasidium oxycocci Rostr., rose-bloom. Mass., Wash., Oreg.

E. vaccinii (Fckl.) Wor., red leaf-spot. Atlantic Coast States; W. Va., Wis.,

Minn., Wash. Fusicoccum putrefaciens Shear, end-rot. Me., Mass., N. J., N. C., Mich., Wis., Wash., Oreg.

Glomerella cingulata vaccinii Shear, bitter-rot. Mass., N. J., N. C., Wis.,

Wash., Oreg.
Guignardia vaccinii Shear, early-rot. Mass., Conn., N. Y., N. J., Va., N. C., Wis., Wash.

Leptothyrium oxycocci Shear. Mass.

Microsphaera alni vaccinii (Schw.) Salm., powdery mildew. N. J., Ohio.

Microsphaera alni vaccinii (Schw.) Salm., powdery mildew. N Phomopsis sp., fruit-rot. Wash. Phyllosticta putrefaciens Shear, rot. N. J. Pucciniastrum myrtilli (Schum.) Arth., rust. Wash. Sclerotinia oxycocci Wor., hard-rot and tip-blight. Wis., Wash Synchytrium vaccinii F. Thomas, red-gall. N. J. Venturia compacta Pk. Me., Mass., N. Y., N. J., Wis., Wash. False-blossom, undet. Mass., N. J., Wis., Wash., Oreg. Wis., Wash.

VIBURNUM.

Viburnum spp., viburnum.

Botrytis sp., blight. Wash.

Cercospora varia Pk., leaf-spot. Mass., N. Y., Ind., Ill., Iowa, Colo. Coleosporium viburni Arth., rust. Md., Wis., Iowa.

Corticium stevensii Burt (Hypochnus ochroleucus F. Noack), leaf-blight.

Helminthosporium beaumonti Sacc., leaf-spot.

Hendersonia foliorum Fckl., leaf-spot. Tex.

Hymenochaete agglutinans Ell. Pa.

Microsphaera alni (Wallr.) Wint., powdery mildew. Widespread.

Phyllosticta lantanoidis Pk., leaf-spot. N. Y.

P. punctata Ell. and Dearn., leaf-spot. Wis.

P. tineola Sacc., leaf-spot. Wis.

Plaemenga vibywni Pk. downy mildey. N. Y. W. Vo. Ca. Ala

Plasmopara viburni Pk., downy mildew. N. Y., W. Va., Ga., Ala., Minn.

Puccinia linkii J. F. Klotzsch, rust. Mich., Idaho, Mont., Wash.

VICIA.

V. faba, broadbean.

Ascochyta pisi Lib. (Mycosphaerella pinodes (Berk. and Blox.) R. E. Stone), leaf-spot. Calif.

Mich., Wash.

Corticium vagum Berk. and Curt., stem-rot. Fusarium culmorum W. G. Smith, root-rot. F. trichothecioides Woll., root-rot. Utah.

Heterodera radicicola (Greef) Muell., root-knot. Calif.

Uromyces fabae (Pers.) D By., rust. Ala., La.

VICIA—Continued.

V. sativa, common vetch.

Ascochuta pisi Lib. (Mycosphaerella pinodes (Berk. and Blox.) R. E. Stone). leaf-spot. Miss.

Cercospora viciae Ell. and Holw., leaf-spot. Iowa, Kans.

Peronospora viciae D By., downy mildew. Va.. Miss.

V. villosa, hairy vetch, winter vetch.

Ascochuta pisi Lib. (Mycosphaerella pinodes (Berk. and Blox.) R. E. Stone). leaf-spot. Occurs scatteringly in widely separated States.

Heterodera radicicola (Greef) Muell., root-knot. Calif. Pseudopeziza medicaginis (Lib.) Sacc., leaf-spot. Miss. Sclerotinia sp. Calif.

VIGNA.

V. catjang, catjang-pea.

Cercospora vignae Ell. and Ev., leaf-spot. Del., Fla., Tenn., La., Ark. Fusarium vasinfectum tracheiphilum EFS., wilt. Widespread in Southern

States.

Heterodera radicicola (Greef) Muell., root-knot.

V. sinensis, cowpea.

Amerosporium oeconomicum Ell. and Tr., leaf-spot. Southern States; Del., Conn.

Bacillus lathyri Manns and Taub., streak. Del.

Bacterium phaseoli EFS. (Phytomonas phaseoli (EFS.) Com. S. A. B.), bacterial blight. Okla.

B. vignae M. W. Gardner and J. B. Kendrick (Phytomonas vignae (Gardner, and Kendrick) Com. S. A. B.), bacterial spot. Ind., Kans.

Cercospora cruenta Sacc., leaf-spot. General east of Great Plains, especially

in South. C. dolichii Ell. and Ev., leaf-spot. Conn., N. J., Ala., Miss.

C. vignae ³ M. Raciborski, leaf-spot. Tex.

Cladosporium vignae M. W. Gardner, leaf-spot. Ind.

Colletotrichum lindemuthianum (Sacc. and Magn.) Briosi and Cav. (Glomerella lindemuthiana Shear), anthracnose. Del., Fla.

Corticium vagum Berk. and Curt., stem-rot. Southern States. Erysiphe polygoni DC., powdery mildew. Southern States.

Fusarium martii phaseoli Burk., root-rot.

F. vasinfectum tracheiphilum EFS., wilt. Southern States; Ind., Kans., Calif.

Heterodera radicicola (Greef) Muell., root-knot. Southern States.

Microsphaera alni (Wallr.) Wint., powdery mildew. Ga.

M. euphorbiae Berk. and Curt., powdery mildew. S. C., Fla.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.), root-rot. Okla., Tex.

Phyllosticta phaseolina Sacc., leaf-spot. Del., Va., N. C., S. C., Ind., Ill., Mich.

Sclerotium rolfsii Sacc., stem-rot. N. C. Thielavia basicola (Berk. and Br.) Zopf, black root-rot. Md., D. C.

Uromyces vignae A. Barclay, rust. Md., Va., Fla., Ala., Tex., Ind., Iowa, Mo., Calif.

Mosaic, undet. Ark., Okla., Ind.

VIOLA.

V. odorata, sweet violet.

Alternaria violae Gall. and P. H. Dorsett, leaf-spot. Conn., Tex. Cercospora violae Sacc., leaf-spot. Conn., Pa., Ala., Tex. Colletotrichum violae-tricoloris R. E. Smith, leaf-spot. Conn.

Corticium vagum Berk. and Curt., stem-rot.

Miss.

Gloeosporium violae Berk. and Br., leaf-spot. N. Heterodera radicicala (Greef) Much

Phyllosticta violae Desm., leaf-spot. Conn., Mass. Sclerotium rolfsii Sacc., stem-rot. Md.

Thielavia basicola (Berk. and Br.) Zopf, black root-rot. Mass., Conn., N. Y., Md., D. C.

³ Cercospora vignae Rac. was described from Java in 1898; Cercospora vignae Ell. and Ev. from Louisiana in 1886. Heald and Wolf reported C. vignae Rac. from Texas in 1912.

VIOLA—Continued.

V. tricolor and V. cornuta, pansy.

Alternaria violae Gall. and P. H. Dorsett, leaf-spot. N. Y., Pa.

Cercospora violae Sacc., leaf-spot. N. Y.

Colletotrichum sp., anthracnose. Fla. C. violae-tricoloris R. E. Smith, leaf-spot. Mass., N. Y., N. J.

Corticium vagum Berk. and Curt., root-rot. Del., Minn. Fusarium sp., wilt. Ohio, Mich. F. violae Wolf, stem-rot, root-rot. Nebr.

F. violae Wolf, stem-rot, root-rot. Nebr.

Heterodera radicicola (Greef) Muell., root-knot. N. Y.

Peronospora violae D By., downy mildew. Miss., Ill., Nebr.

Puccinia ellisiana Thuem., rust. Kans., Nebr.

P. violae (Schum.) DC., rust. S. C., N. Dak.

Pythium debaryanum Hesse, damping-off. Conn.

Ramularia sp., leaf-spot. Wash.

Sphaerotheca humuli fuliginea (Schl.) Salm., powdery mildew. Wash. Thielavia basicola (Berk, and Br.) Zopf, black root-rot. Conn.

VITIS.

Vitis sp., grape.

Armillaria mellea (Vahl) Quel., root-rot. Wash.

Bacterium tumefaciens EFS. and Town. (Phytomonas tumefaciens (EFS. and Town.) Com. S. A. B.), crown-gall. General.

Botrytis cinerea Auct., gray-mold rot. General on fruit. Clitocybe monadelpha (Morgan) Sacc., root-rot. Mo., Ark., Okla., Tex.

Cryptosporella viticola (Reddick) Shear, dead-arm. General east of Great Plains.

Glomerella cingulata (Ston.) Spauld. and Schrenk, ripe-rot. Widespread east of Miss. River. Guignardia bidwellii (Ell.) Viala and Ravaz, black-rot. General east of

Great Plains.

Heterodera radicicola (Greef) Muell., root-knot. Calif.
Isariopsis clavispora (Berk. and Curt.) Sacc. (Cercospora viticola (Ces.)
Sacc.), leaf-spot. Southern States; Mich.
Melanconium fuligineum (Scrib. and Viala) Cav., bitter-rot. Widespread

east of Great Plains, especially South.

Ozonium omnivorum Shear (Phymatotrichum omnivorum (Shear) Dug.),

Tex. root-rot.

Pestalozzia uricola Speg., leaf-blight. Fla., Miss., Tenn., Ohio, Ind., Nebr. Phakopsora vitis (Thuem.) Syd., rust. S. C., Fla. Plasmopara viticola (Berk. and Curt.) Berl. and DeToni, downy mildew. General east of Great Plains; Calif.

Rhytisma vitis Schw., tar-spot. N. Y., Pa.

Roesleria hypogaea Thuem. and Pass., root-rot. N. Y., Pa., Ohio, Ill., Mo., N. Mex.

Septoria ampelina Berk. and Curt., leaf-spot. N. Y., Va., Tex., Kans. Sphaceloma ampelinum D By. (Gloeosporium ampelophagum (Pass.) Sacc.), anthracnose. General but erratic east of Great Plains.

Uncinula necator (Schw.) Burr., powdery mildew. General. California vine disease, undet. Calif.

California vine disease, undet.

Chlorosis. Eastern States. Little-leaf, undet. Calif.

Spanish measles, undet.

WISTERIA.

Wisteria sp., wisteria.

Phyllosticta wistariae Sacc., leaf-spot. N. J., Tex. Septoria wistariae Tharp, leaf-spot. Tex.

YUCCA.

Y. filamentosa, common yucca.

Cercospora concentrica Cke. and Ell., leaf-spot. N. J.
Coniothyrium concentricum (Desm.) Sacc., leaf-spot. Ala., N. Y., Idaho.
Gloeosporium yuccaegenum Ell. and Ev., leaf-spot. Mo.
Leptosphaeria filamentosa Ell. and Ev., leaf-spot. N. J.

ZEA.

Z. mays, maize, Indian corn.

Aplanobacter stewartii (EFS.) McC. (Phytomonas stewarti (EFS.) Com. S. A. B.), bacterial wilt. General east of Great Plains; Southwest; especially on certain varieties of sweet corn.

Aspergillus sp., ear-mold. La., Tex., Calif.

Bacterium dissolvens H. R. Rosen, bacterial root-rot. Miss., La., Ark., Ill. Basisporium gallarum M. Molliard (Coniosporium gecevi Bub.), cob-rot. Conn., Ohio, Iowa, Kans.

Cephalosporium acremonium Cda., black bundle. East of Great Plains.

Calif.

Cercospora sorghi Ell. and Ev., leaf-spot. S. C., Ala., La.

Colletotrichum graminicolum (Ces.) Wils., anthracnose. Conn., N. J., S. C., W. Va.

Diplodia zeae Lév., dry-rot. General where corn is grown. Fusarium culmorum leteius Sherb., seedling blight. Oreg. General.

F. moniliforme Sheld., ear-rot and seed-rot. Gibberella saubinetii (Mont.) Sacc., root-rot. General east of Great Plains.

Helminthosporium sp., stalk canker. Ga.

H. turcicum Pass., leaf-blight. General east of Great Plains.

Heterodera radicicola (Greef) Muell., root-knot. S. C., Ala.

Ophiobolus heterostrophus Drechs., leaf-spot. Fla.

Phyllosticta sp., leaf-spot. Fla.

Physoderma zeae-maydis Shaw, brown-spot. N. J., Md. to Nebr. and Most important in South.

Phytophthora cactorum (Leb. and Cohn) Schroet., root-rot. Puccinia sorghi Schw., rust. General, especially east of Rocky Mts. Pythium sp., root-rot.

Rhizoctonia sp., root-rot. Ohio, Minn., Wash.

Rhizopus nigricans Ehr., seed-blight.

Sclerospora graminicola (Sacc.) Schroet., downy mildew. Iowa.

Sclerotium rolfsii Sacc., stem-rot. Fla., Ala., Tex. Sorosporium reilianum (Kuehn) McAlp., head-smut. N. Y., Ohio, Kans., Idaho, Wash., Calif.

Ustilago zeae (Beckm.) Ung., smut. General.

Mosaic, undet. Ga., Ark., La.

Sheath-spot, Fusaria and other fungi. General.

ZINNIA.

Z. elegans, zinnia.

Cercospora atricincta Heald and Wolf, leaf-spot. Fla., Tex.

C. zinniae Ell. and Mart., leaf-spot. Fla., Ala. Choanephora sp., blossom blight. Fla.

Erysiphe cichoracearum DC., powdery mildew. Conn., W. Va., Ill., Tex.

Fusarium sp., wilt. Wash.

Paratylenchus nanus Cobb, nematode.

INDEX TO COMMON NAMES OF HOSTS

	Page		Page
A cacia	13	Cabbage	27-28
AcaciaAlaska cedar	34	Calendula	30
Alder	18	California poppy	45
Alfalfa	64-65	Callistephus Camphor-tree	30
	20	Camphor-tree	35
Amond Amaryllis. See Belladonna-lily.		Cane	23
American deautyderry	30	Canna	
Ampelonsis	19	Cantaloupe	
Apple	62-64	Cape-jasmine	48
Apricot	84	Carnation	44
Arborvitae Arrowwood, See Viburnum.	100	Carolina-jessamine	48
Arrowwood. See viburnum.	42	Carpet bentgrass	
Artichoke, globe	50	Carrot Cassava	43 64
Jerusaiem Ash		Castor-bean	91
A sporogra		Cotolno	32-33
Asparagus	80-81	Catalpa Catjang-pea	
Aspen Aster. See Callistephus.	00 01	Cauliflower	28
Avocado	70	Cedar, Alaska	34
Azalea	24	incense	59
		red	
BaldcypressBalsam. See Fir.	100	white	34
Balsam. See Fir.		Celeriac	22
Bamboo 23 Japanese timber	24-73	Celery	22
Japanese timber	73	Chard, Swiss	26
Banana	66	Chayote	34
Rorhorty	25	Cherimova	21
Barley	52 - 53	Cherry	81-82
Basswood	100	Cherry Chess	30
Bayberry	66	Chestnut	32
Bay, red	70	Chicory	35
śweetBeachgrass	62	China-aster	63
Beachgrass	19	Chinaberry	50
Bean	70-71	Chinese cabbage	29
broad Scarlet Runner	105	Chinquapin	32
Scarlet Runner	71	Chives	18
soy_ velvet	96	Chokeberry	23
velvet	99	Chokecherry	83-84
Hearnerry	23	Christmasberry	72
Beautyberry, American	30	Christmas-rose Chrysanthemum	50
Beech	46 32	Chrysanthemum	. 34
blue	25-26	Citrus	35
Beet	23-26 24-25	Clematis	37
Begonia Belladonna-lily	19	Clover1	01-102
Bentgrass	17	Japansouthern bur	58 64
Bermuda grass		white sweet	65
Big tree		Coconut	38
Birch		Coffee_	38
Bittersweet	33	Coffeetree, Kentucky	49
Blackberry	92-93	Collards	28
Logan	93	Columbine	22
LoganBlack locust	91	Coneflower	94
Bladdernut	99	Coralberry	99
Blueberry		Coraltree	45
Blueflag iris	55	Corn, Indian	108
Bluegrass	80	Cosmos	39
Boston ivy	20	Cotton	49
Box	30	CottonCottonwood	80-81
Boxelder	14	Couchgrass	16
Broadbean	105	CouchgrassCowpea	106
Bromegrass, Hungarian	29	Crab apple	62
Broomcorn Broomcorn millet	52	Cranberry	105
Broomcorn millet	69	Crapemyrtle	57
Brussels sprouts	29	Crossvine	27
Buckeye	16	Croton	39
Buckthorn	89	CrotonCucumber	40
Buckwheat	46	Cucumbertree	62
Buffaloberry Buffalo grass	96	Currant	90-91
	30	Cyclomon	41 41
Bugloss Bumelia	21 30	Cyclamen	41
Bur clover, southern	64	Cypress	100
Burninghush	45	bald Nootka	34
BurningbushBush-honeysuckle	44	TANDORY	04
Butterflybush	30	Dahlia	42-43
Butterflyweed	23	Dasheen	38
Butternut	55	Date palm	72
Buttonbush	33	Davlily	50

	Page		Page
Deutzia	43	Jetbead	. 90
Devils-walkingstick	23 93	Johnson grass	
Dewberry	21	Jonquil Judas-tree	
Dogwood	38	Juneberry	
Douglas fir	86	Juniper	56

Easter lily	59	Kale	. 28
Eggplant	96-97	Kentucky coffeetree	
Elderberry Elm	104	Kerria Kohlrabi	
Emmer	103	***************************************	
Endive	35	Larch	. 58
Eucalyptus	45	Larkspur	. 43
_	40	Laurel, mountain	
Fescue	$\frac{46}{46}$	Lemon Lettuce	
FigFilbert	39	Lilac	
Fir		Lily	
Douglas	86	Lima bean	71
Firethorn, scarlet	86	Lime	35
Flax	59	Linden	100
Flowering dogwood	38 47	Loblolly-bay	49 91
Forsythia Four-o'clock	66	Locust, black Logan blackberry	93
Foxglove	44	Loquat	. 44
Fringetree	34	Lupine	60
		•	
Gaillardia	48	Madrone	. 23
Garlie	18	Magnolia	
Geranium Ginseng	70 69	Maize Maleberry	
Gladiolus	48	Mangel-wurzel	26
Globe artichoke	42	Mango	64
Goldenbell	47	Manzanita	23
Goldenglow	94	Maple	13-15
Goldenseal	53	Marigold	100
Gooseberry	91 40	Meadowsweet	
Grape Grape	107	Mesquite Mignonette	89
Oregon	62	Millet	
Grapefruit	36	broomcorn	69
Grass, Bermuda	31	proso	69
buffalo	30	Mockorange	72
Johnson orchard	$\frac{52}{42}$	Monkshood	16 66
Sudan	52	Moonseed Moosewood	14
Guava	86	Morning-glory	54
Gumbo	50-51	Mountain-ash	98
		Mountain-ash Mountain-laurel	57
Hackberry	33	Mulberry	66
Hawthorn Hazelnut	39 39	Muskmelon	40
Hemlock 10		Narcissus	67
Hemp.	31	Nasturtium	103
Hickory	51	Nectarine	21
Holly		Ninebark	73
Hollygrape Hollyhock	62	Nootka cypress	34
Honeylocust	49	Oak	87-88
Honeysuckle	60	Oats	24
bush	44	Oceanspray	52
Hop	53	Okra	50-51
Hophornbeam	68 86	Oleander	67 67–68
Hoptree Hornbeam	31-32	Olive Russian	44
hop	68	Onion	17
Horsechestnut	16	Orange	
Horseradish	88	king	36
Huckleberry	48	Osage	61
Hungarian bromegrass	29 53	Satsuma Seville	36-37
Hydrangea	53	Orchard grass.	42
	50	Oregon grape	62
Incense-cedar	59	Osage-orange	61
India rubbertree	47	Osmanthus	68
IndigobushIris	19	Pagada twa	00
Ivy, Boston	55 20	Pagoda tree Pansy	98 107
English	50	Papaw	23
		Papaya	23 31
Japan clover	58	Parkinsonia	69
Japanese barberry	25	Parsley	70
Japanese creeper Japanese timber bamboo-	20 73	Parsnip	70 69 79 58
Jasmine, Cape	48	Peasweet	58
Jasmine, Cape Jerusalem-artichoke	50	Peach	20-21
Jessamine	48	Peanut	22-23

	Page		Page
Pear	86-87	Soapberry	95
Pecan	51	Sorgo	52
Peony	68 31	Sorghum	52 67
Pepper Pepperidge	67	Sour gum Sourwood	
Peppermint	66	Southern bur clover	64
Peppertree	95	Soybean	
Peppervine	19	Spearmint	66
Persimmon	44	Spelt	103
Petsai cabbage	29	Spicebush	25
Petunia	70 72	Spinach Spirea	98-99
PhloxPigeon-pea	30	Spruce	
Pine		Squash	40
Pineapple	21	Strawberry	47
Planetree	80	Sudan grass	52
Pleurisy root	23	Sugar-apple	21
Plum	85-86	Sugar beet	25-26
PoincianaPoincianaPomegranate	80 86	Sugarberry	33 94
Poplar		Sugarcane Sugar sorghum	52
Poppy, California	45	Sumac	90
Potato	97-98	Summer squash	40
sweet	54	Sunflower	50
Primrose	81	Sweetbay	62
Princess tree	70	Sweetclover, white	65
Privet Proso millet	59 69	Sweetfern Sweetgum	
Prune	84	Sweet pea	
Pumpkin	41	Sweetpotato	54
		Sweet-william	43
Quackgrass	16	Swiss chard	25
Quince	41-42	Sycamore	80
D 11.1	89	Syringa	72
Radish Raspberry		Tamarack	58
Redbay	70	Tangerine	36
Redbud	33	Teosinte	45
Redcedar	56-57	Timothy	72
Redpepper	31	Tobacco	60 61
Redfop Redwood	17 96	Toyon. See Christmasberry.	00-01
Rhododendron		Treemallow	58
Rhodora	90	Tree-of-heaven Trumpetcreeper	17
Rhubarb	89	Trumpetcreeper	27
Rice	68	Tulip Tuliptree Tupelo	50 60
Rose	91-92	Tunpiree	67
Rose-of-Sharon	51 47	Turnip	29
Rubbertree, IndiaRussian-olive	44	1 41 11 11 11 11 11 11 11 11 11 11 11 11	
Rutabaga	27	Umbrella-tree, Texas	65
Rye	95-96	77	00 101
Ryegrass	60	Vegetable-oyster10	99 101–01
Sago cycas	-41	Velvetbean Vetch	106
Salal	48	Viburnum	105
Salsify10		Violet	106
Sapodilla	15	Virginia creeper	20
Sapote	15	Virgins-bower	37
Saskatoon	19 95	Wahoo	45
SassafrasSatsuma orange		Walnut	
Scarlet Runner bean	71	Watermelon	35
Serviceberry	19	Waxmyrtle	66
Seville orange	35-36	Wheat 10	2-103
Shadblow	19	Whitecedar	34
Shadbush	19	Willow	94 53-54
Shallot	17 48	Winterberry	107
Silktassel-bushSilverberry	44	Wisteria Witch-hazel	49-50
Smoketree	90	Wormseed	34
SmoketreeSnakeroot, Virginia	23		
Snapdragon Snowball. See Viburnum.	22	Yellow poplar. See Tuliptree.	107
Snowball. See Viburnum.	99	Yucca	101
Snow-on-the-mountain	45	Zinnia	108

ORGANIZATION OF THE UNITED STATES DEPARTMENT OF AGRICULTURE

April 1, 1926

Secretary of Agriculture	W. M. JARDINE.
Assistant Secretary	
Director of Scientific Work	
Director of Regulatory Work	
Director of Extension Work	
Director of Information	
Director of Personnel and Business Adminis-	
tration	W. W. STOCKBERGER.
Solicitor	R. W. WILLIAMS.
Weather Bureau	CHARLES F. MARVIN, Chief.
Bureau of Agricultural Economics	THOMAS P. COOPER, Chief.
Bureau of Animal Industry	JOHN R. MOHLER, Chief.
Bureau of Plant Industry	WILLIAM A. TAYLOR, Chief.
Forest Service	
Bureau of Chemistry	C. A. Browne, Chief.
Bureau of Soils	
Bureau of Entomology	
Bureau of Biological Survey	E. W. Nelson, Chief.
Bureau of Public Roads	THOMAS H. MACDONALD, Chief.
Bureau of Home Economics	
Bureau of Dairying	
Fixed Nitrogen Research Laboratory	
Office of Experiment Stations	
Office of Cooperative Extension Work	
Library	
Federal Horticultural Board	C. L. MARLATT, Chairman.
Insecticide and Fungicide Board	
Packers and Stockyards Administration	
Grain Futures Administration	,

This bulletin is a contribution from

112

ADDITIONAL COPIES
OF THIS PUBLICATION MAY BE PROCURED FROM
THE SUPERINTENDENT OF DOCUMENTS
GOVERNMENT PRINTING OFFICE
WASHINGTON, D. C.

15 CENTS PER COPY



